THE IRON TRADE REVIEW

Volume L CLEVELAND, MARCH 21, 1912 Number 12

# Heavy Reductions in Lake Iron Ore Prices

Considerable ore has been sold by Cleveland interests during the past few days on the basis of a reduction of 75 cents for Old Range and Mesabi Bessemer and 65 cents on Old Range and Mesabi Non-Bessemer from last year's prices. This reduction works out at $3.75 for Old Range Bessemer and $3.50 for Mesabi Bessemer; and $3.05 for Old Range Non-Bessemer and $2.85 for Mesabi Non-Bessemer. It is understood that about 1,500,000 tons have been placed at these figures and that some of the ore was sold as early as two months ago. On the other hand, another Cleveland interest stated that it had sold some ore at only 50 cents reduction from last year's prices. These sales have been made with a guarantee of 55 per cent on Old Range and Mesabi Bessemer and 51½ per cent on Old Range and Mesabi Non-Bessemer, the same as for several years. The market is an open one.

Grave danger of strikes in the anthracite and bituminous coal fields have appeared like a cloud over the iron trade at a time when the skies were beginning to clear in a highly satisfactory manner. Of course, labor troubles would result in higher prices on some products, but the consequences, on the whole, would be disastrous to manufacturers of iron and steel. At the present time, the strike which has paralyzed the iron business in Great Britain has not had much effect in this country, although some inquiries for structural material for export to England are now pending.

**Iron Ore Freight Rate**

The announcement by a Cleveland firm that it had made contracts for carrying a million tons of ore at a reduction of 5 cents from the prevailing rate of last year, caused some excitement, but special conditions which surrounded these contracts prevented them from determining what the prevailing rate would be this year. Vesselmen have good grounds for hoping that the net rate will not be less than 45 cents from the head of the lakes. The Interstate Commerce Commission will soon announce the reduction in dock charges. The outlook is that as a result of recent prosecutions, ore will be handled in a simpler manner and at a considerable reduction in cost to the shipper.

**Pig Iron**

The Steel Corporation continues to run at a very high rate of output of finished products, and if present conditions are sustained, further purchase of pig iron or the blowing in of isolated furnaces will be necessary. It seems probable that the Corporation will prefer to buy iron rather than operate some of its idle furnaces. Southern Ohio furnaces have advanced their quotations on No. 2 foundry 50 cents, and the foundry pig iron market in the central west is showing increased strength. This is also true in the south, where $10.50 now seems to be the minimum for Alabama iron. Inquiries for 100,000 tons of iron for export aroused much interest in the Virginia and Birmingham districts. In the eastern territory, fear of labor troubles in the coal mining regions is causing considerable confusion in pig iron conditions. Recent sales of basic were from 12,000 to 15,000 tons to the American Rolling Mill Co., Middletown, O., and from 5,000 to 6,000 tons to another southern Ohio consumer.

**Railroad Buying**

The Harriman Lines are negotiating for from 80,000 to 100,000 tons of rails and large and important western systems are negotiating for rails. The Wabash has purchased 15,000 tons from the Lackawanna in addition to the 20,000 tons awarded to the Illinois Steel Co. New Haven will divide from 18,000 to 20,000 tons between the Pennsylvania and Bethlehem steel companies. The Long Island has taken bids for grade crossing work, which will require at least 2,500 tons. The Western Maryland's order for 2,500 steel cars was divided among the Pressed Steel Car Co., Standard Steel Car Co., and the American Car & Foundry Co. The Illinois Steel Co. has booked 12,000 tons of car material resulting from recent equipment orders. Both the Carnegie and Illinois companies have advanced light rail prices $1.50 on 8 to 20 pounds, and $2 on 20 to 40 pounds. Higher scrap prices have caused similar advances among rolling mills.

**Finished Material**

In finished materials, the market is showing increasing firmness, although price concessions in the east on plates and shapes have not entirely disappeared. On 3,800 tons of twisted bars for viaducts near Baltimore the price is said to have been 1.05c, Pittsburgh, but this was a very attractive order. The Carnegie Steel Co. is now asking 1.15c on bars and 1.20c, Pittsburgh, on plates and shapes, and the Illinois Steel Co. is asking 1.30c, Chicago, on bars and 1.35c on shapes and plates. Other companies are still selling bars at 1.10c and shapes at 1.15c, Pittsburgh. An increasing tonnage of these finished products is going at higher prices, but almost entirely to small buyers. Buyers of heavier tonnages do not seem to have much difficulty in shading quotations. The total structural awards since March amounted to about 75,000 tons, of which 17,000 went to the American Bridge Co. and 58,000 to independents. W. & R. Grace have placed second ocean steamship of 5,000 to 6,000 tons burden with the Cramps. The Carnegie Steel Co. has taken 3,100 tons for a lake passenger steamer.

# PITTSBURGH

## Fair Demand for Pig Iron---Crude Steel Stronger

Office of THE IRON TRADE REVIEW,
2148-49 Oliver Bldg., March 19.

Continued activity in the pig iron market, with considerable buying of a quiet order in Bessemer iron, and new inquiries for about 25,000 tons of basic, new buying in foundry iron, higher prices in plates and shapes, strengthening in the semi-finished steel trade, and a firm tone to the coke market, presents on the whole, more encouraging features to the iron and steel trade this week. New car orders are still somewhat disappointing, but indications point to a renewed interest in this trade in the near future. Steel bars have gained a higher minimum price, and considerable new business for them has developed. Wire products show a reactionary tendency from a period of unusual activity. Light rails have gained sharply in volume of business and are firmer in price, while standard section rail production is going at a heavier pace than in some years. The general tendency of prices throughout the entire range of iron and steel products appears to be upward, but it is moving slowly and conservatively.

**Pig Iron.**—The pig iron market is showing considerable life, with evidence of much quiet buying of Bessemer, which, in lots of 2,500 to 5,000 tons, it is estimated will reach at least 15,000 tons during the week at $14.25, valley. Basic is also active, and inquiries for about 22,000 tons are now pending. One inquiry is for 12,000 tons and another for 6,000, a third for 3,000 and a fourth for 2,000 tons, three of which are for Ohio delivery. The market is firm at $13, valley, and some sales during the week were made at $13.25. An inquiry for 10,000 tons of basic sent out a few weeks ago is still held up on account of the higher quotations. In foundry iron, the market is showing greater activity, and a number of sales of foundry at $13.25, valley, has established the price at that point, with prospects of an even better figure in the near future. One Pittsburgh interest is in the market for 5,000 tons, and another for 2,000 tons, while eastern foundries are making inquiries freely for the second quarter and last half delivery. There is not as much new business for malleable iron, but prices show great firmness, with some small sales at $13.25, and some fair-sized tonnages going at $13, valley. Gray forge is quiet at $12.50, valley. The impression is growing very rapidly that with the advance in coke prices the entire pig iron market must show a relative increase in values.

There is so much strength to the coke situation, with the prospects of continued high pressure and the remarkable heavy consumption, that there seems little chance of this commodity returning to its low point of a month ago, for some time at least. The leading interest is operating 51 of its blast furnaces, with eight idle, one furnace at South Sharon being temporarily out for repairs. The Jones & Laughlin Steel Co. added one stack at Aliquippa to the active list, making three out of four at that point, in operation. Its Soho furnace in Pittsburgh is still out undergoing repairs and relining. We quote the market as follows:

(Prompt Shipment.)

| | |
|---|---|
| Bessemer, valley | $14.25 |
| Bessemer, Pittsburgh | 15.15 |
| Basic, valley | 13.00 |
| Basic, Pittsburgh | 13.90 |
| No. 2, foundry, Pittsburgh | 14.15 |
| Gray forge, Pittsburgh | 13.40 |
| Malleable, Pittsburgh | 13.90 |

(Second Quarter.)

| | |
|---|---|
| Bessemer, valley | $14.25 |
| Bessemer, Pittsburgh | 15.15 |
| Basic, Pittsburgh | 13.65 |
| No. 2 foundry, Pittsburgh | 14.15 |
| Gray forge, Pittsburgh | 13.40 |
| Malleable, Pittsburgh | 13.90 |

**Ferro-Alloys.** — Ferro-manganese is in good demand, and stocks are very scarce. Prices are held firm at $41, Baltimore, but any demand for urgent shipment would probably command a better price. The market for 50 per cent ferro-silicon is very quiet, and is confined to sales of small lots, without change in quotation. The domestic grades are unchanged, and the demand is very quiet.

We quote ferro-manganese nominally at $41, Baltimore, for prompt and forward delivery. The freight rate from Baltimore to Pittsburgh is $1.95 per ton.

Fifty per cent ferro-silicon is quoted nominally at $70 to $71, Pittsburgh, for prompt and forward delivery; 12 per cent, $22; 11 per cent, $21; 10 per cent, $20, f. o. b. Globe, Jisco and Ashland furnaces. The freight rate to Pittsburgh is $1.90. The foreign grades are held at $1 or more a ton over domestic prices.

**Plates.** — There has been a very marked improvement in plates, with specifications and inquiries indicating a heavy volume of new business, and manufacturers are showing a greater firmness in prices, the bulk of the business today being quoted at 1.20c, Pittsburgh, for both plates and shapes. While there may be some attractive business possible at 1.15c, the leading plate manufacturers of Pittsburgh are standing "pat" on the 1.20c, base. A number of inquiries for railroad cars are rumored. Among them is one for 20,000 steel underframes for cars said to be intended to reinforce old wooden box cars, on one of the leading trunk lines. The New Haven line has ordered a number of motor cars for its passenger service from the Standard Steel Car Co., and the Wabash Railroad has increased its inquiry from 20 to 24 steel passenger cars. The Western Maryland is inquiring for a total of 30 passenger coaches, baggage and postal cars. The Chicago, Milwaukee & St. Paul has decided to build 500 automobile cars in its own shops, for which it is in the market for material at present. The leading interest has taken an order for 3,100 tons of ship plates for a new passenger steamer on the Lakes, and there are still some very extensive inquiries in the market for ship plates in the east, that have not developed into orders as yet. The majority of plate mills are running on full schedules, and to capacity. The Western Maryland's distribution of its order for 2,500 steel cars the past week has cleaned up the definite freight car inquiries of large size that have been in the market for some time. We quote the market as follows:

**Tank plates, ¼ inch thick, 6¼ to 100 inches,** 1.15c to 1.20c. Extras are as follows, per 100 **pounds: Boiler and flange steel plates, 0.10c; A. B. M. and ordinary firebox steel plates, 0.20c; still bottom steel, 0.30c; marine steel, 0.40c; locomotive firebox steel, 0.50c; all sketches excepting straight taper plates varying not more than 4 inches in width at ends, narrowest end being not less than 30 inches, 0.10c; circles, 0.20c. Plates in widths over 100 inches up to 110 inches, 0.05c; over 110 inches up to 115 inches, 0.10c; over 115 inches up to 120 inches, 0.15c; over 120 inches up to 125 inches, 0.25c; over 125 inches up to 130 inches, 0.50c; over 130**

inches, 1c. Gages under ¼ inch to and including $\frac{5}{16}$-inch plate on thin edge, 0.10c; under $\frac{5}{16}$ and including No. 9, 0.25c. Five cents extra for less than carloads. Terms net cash in 30 days.

**Sheets.**—The very fair run of specifications on sheets continues and prices show more firmness with new business coming out, and indications are that the last of the extreme low priced black sheets have been sold. Very attractive business can be done at 1.80c, but the majority of sales are continuing at 1.85c for No. 28 gage, and galvanized sheets are stronger, the price being held somewhat more firmly than the black sheets, because of the higher price for spelter, which has affected all galvanized products. Manufacturers are complaining of a shortage of cars. Unless some betterment is made by railroads in car supply, a curtailment of production will become a serious matter. A number of plants are now operating at less than capacity. We quote the market as follows:

Blue annealed sheets No. 10 gage, 1.35c to 1.40c; black annealed sheets No. 28 gage, 1.80c to 1.85c; galvanized sheets, No. 28 gage, 2.80c to 2.85c; painted roofing sheets, $1.35 per square for No. 28 gage, 2½-inch corrugation; galvanized roofing sheets, $2.45 per square for No. 28 gage, 2½-inch corrugation, f. o. b. Pittsburgh.

**Tin Plate.**—Specifications are continuing heavy on tin plate and while little new business has been placed, the market seems stronger in tone, and the leading interest continues to quote $3.40 per base box, and leading independents are holding to $3.35 and $3.40, with an occasional sale reported among the smaller interests for spot shipment at $3.30. The actual volume of business is so small that a fair test of the present market is not possible. We quote the market as follows:

Coke tin plate, 100-pound basis, 14 x 20, $3.35 to $3.40, f. o. b. mill, Pittsburgh district.

**Rails and Track Material.**—Specifications continue very heavy on contracts for standard section rails. The volume is above the first two months and bids fair to continue at the present rate for sometime ahead. Practically the entire capacity of the leading interest is running on full schedule, and shipments are going forward readily. The feature of the rail market for the past week, however, has been the steady increase in demand for light rails. Prices are very much stiffer, new business has become greater in volume than for many months, and inquiries are increasing and involve large tonnages. There is every indication of an advance in price in the near future. Track material is moving without change, and specifications are not up to normal as yet, but with more open weather this condition is expected to change within the next week, particularly in relation to bolts, spikes and splice bars. The market is quoted as follows, and the base price on open-hearth steel rails 1.34c per pound at the mill.

Fifty-pound and heavier, 1.25c per pound; carloads and less than 500 tons, 1.34c per pound; light rails on base weight of 40 to 45 pounds, 1.16c, the schedule on the other weights being irregular and subject to negotiations; angle splice bars for standard sections, 1.50c, Pittsburgh; track bolts, 2.20c to 2.25c, Pittsburgh.

*Railroad Spikes*

| | |
|---|---|
| 4½, 5 and 5½ and 9-16 | $1.40 |
| 3, 3½, 4, 4½ and 5 x ½ | .10 |
| 3½, 4 and 4½ x $\frac{7}{16}$ | .20 |
| 3, 3½, 4 and 4½ x ⅜ | .30 |
| 2½ x ⅜ | .40 |
| 2½, 3 and 3½ x $\frac{7}{16}$ | .60 |
| 2 x $\frac{7}{16}$ | .80 |

**Steel.** — Specifications against running contracts for rolling billets and sheet bars were much better during the past week, and leading producers report a much improved shipping of both products. During the latter part of last week, notices were issued, withdrawing all quotations on billets and sheet bars below the $20, base, Pittsburgh, unless accepted immediately, and this has been generally done. While it is possible that some concessions could be secured on Bessemer and open-hearth billets on very large orders, the market is closer to $20 for Bessemer and open-hearth billets, and $21 for Bessemer and open-hearth sheet bars, than for some time. A number of inquiries for round tonnages of billets for foreign shipment have been received in the Pittsburgh market this week. Some of these inquiries have developed into actual business, and have absorbed considerable of the surplus tonnage that seemed to be of any importance in this territory. The leading interest still remains out of the market. Forging billets are still quoted at $28, Pittsburgh, and firm, although there is not a great deal to be had at that price. We quote the market as follows:

Bessemer 4 x 4 billets with 0.25 carbon and less are quoted at $20, with the usual extras for size and analysis, and open-hearth rolling billets, $20; Bessemer sheet and tin bars are quoted at $21, and open-hearth sheet bars are quoted at $20.50 to $21, f. o. b. Pittsburgh, with full freight to destination added. Forging billets are quoted at 27 to $28, Pittsburgh.

**Hoops and Bands.** — Specifications are heavier on hoops and bands than at any time this season, and if the ratio continues to increase, it will crowd existing capacity considerably. The market is firm at 1.25c to 1.30c, and better than 1.30c for prompt shipment. Shipments continue on a very large scale, and some new business is coming out as the season advances. We quote the market as folows:

Hoops in carload lots, 1.25c to 1.30c, Pittsburgh; in less than carload lots, 1.40c; bands, 1.15c, base, with net extras, as per standard steel.

**Merchant Bars.**—There is considerable business coming out for steel bars, and prices are much stronger than a week ago. There is every indication that a general advance from the low point of 1.10c is imminent. Some of the leading bar manufacturers are already quoting 1.15c as their minimum price. One large order for 3,000 to 4,000 tons of reinforced bars for concrete work in the east is understood to have been placed this week by the Pennsylvania railroad somewhat below the nominal market. The steel shafting market continues fairly active in the automobile trade, and considerable new business is being placed for the last half of the year, with prices slightly under the nominal market, although the current run of business seems to hold fairly close to existing quotations. We quote the market as follows:

Common iron bars, 1.30c, Pittsburgh; Bessemer and open-hearth steel bars, 1.10 to 1.15c; plow and cultivator, 1.25c; channels, angles, zees, tees, under 3 inch, 1.25c, all f. o. b. mill. The following differentials are maintained on steel: Less than 2,000 pounds of a size, 0.35 advance. Cold rolled and ground shafting, 65 per cent off in carloads and 60 and 10 per cent in less than carloads, delivered in base territory.

**Muck Bar.**—The market for muck bar is very quiet. A number of the leading producers are not operating in full, and inquiries are very scarce. Specifying is also very light in so far as existing contracts are concerned, but prices are holding firmly to the nominal market quotations. We quote $28 to $29, Pittsburgh.

**Structural.**—An improvement in the general tone of the structural market is noted during the past week, and while no large orders have come out for fabricating, there has been a good volume of small tonnage, which in the aggregate has had a wholesome influence on prices, and there is less talk here of low-priced material, the average prices quoted being $1 a ton higher. Some pending inquiries are expected to develop a fair tonnage in the local market. The city of Pittsburgh has adopted plans for a steel arch bridge instead of reinforced concrete over the Pennsylvania railroad in the Bloomfield district, which will require a good-sized tonnage, as the bridge is 400 feet long. Inquiries are looked for within the next few days on the steel for the new Monongahela House, construction work on which will commence

early next month. The city of Altoona is also in the market for steel for a highway bridge over the Pennsylvania railroad at Altoona, with an estimate of 350 tons of shapes and plates. A fair volume of small bridge work and mill construction continues, and new tonnage is in prospect in connection with the Brier Hill Steel Co.'s improvements, which are being figured upon. An order involving 3,500 tons of galvanized steel material has been placed with the Riter-Conley Mfg. Co., which is to be fabricated into 1,350 galvanized transmission towers for shipment to Barcelona, Spain. This export order is for an extensive power transmission line in that country, and shipments are going forward from Leetsdale shops, steadily. We quote the market as follows:

Beams and channels, 15 inches and under, zees, 1.15c to 1.20c; tees, 1.15c to 1.20c; angles, from 3 to 6 inches, 1.15c to 1.20c; over 6 inches, 1.25c to 1.30c; universal and sheared, 1.20c to 1.25c; over 15 inches, 1.30c to 1.35c; plates, 6¼ inches wide and wider, 1.30c.

**Merchant Pipe.**—Specifications continue steady on merchant pipe, but new business is still being taken mainly in small lots, and prices remain unchanged. An inquiry for 20 miles of 10-inch line pipe for West Virginia delivery is due in the market this week. Another inquiry for 31½ miles of line pipe for Standard Oil interests, also for West Virginia delivery, is expected out this week. Two large contracts are pending, involving about 130 miles. The advance in galvanized iron pipe is being well maintained, but no advance is contemplated in plain wrought iron pipe, quotations remaining unchanged. We quote the official discount to jobbers, subject to the usual preferential discount to the larger buyers, as follows:

*Iron and Steel Pipe Basing Prices*

| | Steel. | | Iron. | |
|---|---|---|---|---|
| | Butt weld. | | | |
| | Black. | Galv. | Black. | Galv. |
| ⅛, ¼ inch..... | 74 | 54 | 68 | 48 |
| ⅜ inch ..... | 75 | 65 | 69 | 53 |
| ½ inch ..... | 78 | 68 | 72 | 59 |
| ¾ to 1½ inch..... | 81 | 73 | 75 | 64 |
| 2 to 3 inches..... | 82 | 75 | 76 | 65 |
| | Lap weld. | | | |
| 2 inches ..... | 79 | 72 | 72 | 63 |
| 2½ to 4 inches..... | 81 | 74 | 74 | 66 |
| 4½ to 6 inches..... | 80 | 72 | 73 | 65 |
| 7 to 12 inches..... | 77 | 68 | 71 | 61 |
| 13 to 15 inches..... | 55 | .. | 47 | .. |
| Extra Strong, Plain Ends. | | | | |
| | | | Butt weld. | |
| ⅜, ¼, ⅛ inch..... | 70 | 60 | 65 | 55 |
| ½ inch ..... | 75 | 69 | 70 | 63 |
| ¾ to 1½ inch..... | 79 | 73 | 74 | 65 |
| 2 to 3 inches..... | 80 | 74 | 75 | 66 |
| Extra Strong, Plain Ends. | | | | |
| | | | Lap weld. | |
| 2 inches ..... | 76 | 70 | 71 | 63 |
| 2½ to 4 inches..... | 81 | 74 | 74 | 66 |
| 4½ to 6 inches..... | 77 | 71 | 72 | 65 |
| 7 to 8 inches..... | 70 | 60 | 65 | 55 |
| 9 to 12 inches..... | 65 | 55 | 60 | 50 |

| Double Extra Strong, Plain Ends. | | | | |
|---|---|---|---|---|
| | | | Butt weld. | |
| ½ inch ..... | 65 | 59 | 60 | 52 |
| ¾ to 1½ inch..... | 68 | 62 | 63 | 55 |
| 2 to 3 inches..... | 70 | 64 | 65 | 57 |
| Double Extra Strong, Plain Ends. | | | | |
| | | | Lap weld. | |
| 2 inches ..... | 66 | 60 | 61 | 52 |
| 2½ to 4 inches..... | 68 | 62 | 63 | 57 |
| 4½ to 6 inches..... | 67 | 61 | 62 | 56 |
| 7 to 8 inches..... | 60 | 50 | 55 | 45 |

Plugged and reamed pipe is furnished at 2 points higher price, either butt or lap weld.

The above discounts are for full weight pipe, subject to a variation of 5 per cent, merchant pipe, when specified, being furnished up to 6 inches at one point higher discount (lower price.)

**Boiler Tubes.**—The improvement in the demand for boiler tubes is still apparent, and a fair volume of business is coming into the market, but in the form of new orders, and in specifications against existing contracts. Mills are increasing their running schedules on boiler tubes, and prices are held very firm. The official discount on steel and charcoal iron boiler tubes follows:

*Steel*

| | |
|---|---|
| 1¾ to 2¼ inch..... | 65 |
| 2½ inch ..... | 67½ |
| 2¾ to 3¼ inch..... | 72 |
| 3½ to 4½ inch..... | 75 |
| 5 and 6 inch..... | 67½ |
| 7 to 13 inch..... | 65 |

*Charcoal Iron*

| | |
|---|---|
| 1½ inch ..... | 48 |
| 1¾ to 2¼ inch..... | 50 |
| 2½ inch ..... | 55 |
| 2¾ to 5 inch..... | 60 |

To destination east of Mississippi river will be sold at delivered discount for carloads lowered by 2 points, for lengths 22 feet and under; longer lengths, f. o. b. Pittsburgh. Usual extras to jobbers and boiler manufacturers.

**Wire Products.**—The active specifying on wire and wire nails has been less noticeable during the past week, there being a somewhat sharp falling off in volume, and consumers are less desirous of taking shipments on the higher price now prevailing. The leading interest is running somewhat below capacity on wire and wire nails, and independents, while making more satisfactory production compared with capacity, are feeling the slowness of the buyers in coming out. The market nominally remains at 1.60c base, but the restricted movement in wire and wire nails, is causing some show of weakness, and it is believed that the 1.55c base price can be done for the next 30 days. We quote the market as follows:

**Wire nails, jobbers, carload lots, $1.60; retailers' carload lots, $1.65; cut nails (western makers), jobbers' carload lots, $1.55 to $1.60, painted barb wire, jobbers' carload lots, $1.60; retailers' carload lots, $1.65 with 30c for galvanizing; plain wire to jobbers in carloads, $1.40; and to dealers, in carloads, $1.45; polished staples, $1.60; galvanized staples, $1.90.**

**Wire Rods.** — The demand for wire rods continues fairly active and specifications are coming out in good form, although new buying is somewhat contracted. Manufacturers are disposed to hold prices firm at $25.50 for prompt shipment, and will accept contracts at $26 for first half. We continue to quote, however, $25.50 to $26, Pittsburgh, for Bessemer and open-hearth wire rods.

**Coke.** — There has been a little quieter tone to the coke market during the past week. Urgent necessities of the furnaces seem to have been provided for, and there is less excitement in placing orders for spot furnace coke. The price remains firm, and while it is possible that small lots of furnace grades for prompt shipment could be secured at a shade below $2.25, ovens, if placed at once, the market is expected to go somewhat higher as the month advances, and buying resumes more actively. Foundry coke has not subsided in the same manner, and $2.75 is now the lowest price quoted for the high grade Connellsville product. The severe scarcity in cars for foundry coke shipment, prevents any surplus being shipped. The labor situation has become more serious throughout the Connellsville region, there being a shortage of men there estimated at between 4,000 and 5,000, due in a large measure to the resumption of many small coking coal mines by operators, who are trying to get some of their product into the coal market at existing high prices. While there is not expected to be any rush of contract coke at the opening of the second quarter, there is expected to develop a strong demand for spot furnace coke for furnaces that are exceeding their contract requirements by almost double their tonnage. Some coke operators report sales of furnace coke at $2.35 and as high as $2.40, ovens, during the week, but these were for special grades, and were not fair market standards. A sale of low grade coke is also reported that was off somewhat on analysis at $1.60, ovens. This is the lowest priced coke known to have been sold, and was practically a forced sale. We quote standard Connellsville furnace coke for prompt shipment at $2.15 to $2.25, ovens, and contract at $2.25, ovens; high grade Connellsville foundry coke for prompt shipment at $2.75 to $3, ovens, and on contract $2.40 to $2.60, ovens. The Connellsville *Courier* for the week ending March 9, reports 31,055 active ovens, with a production of 398,715 tons as compared with 30,947 ovens, active, and a production of 396,010 tons, for the previous week, the gain being 2,705 tons, entirely with the merchant ovens.

**Old Material.** — Very little inquiry

is going for old material, and the market is extremely quiet since the Steel Corporation placed its order for about 4,000 tons of heavy melting steel two weeks ago. There is an inquiry for about 10,000 tons of heavy melting steel, which has not been placed, and for which the Steel Corporation is the intended buyer. Rerolling rails are firm, and most dealers are holding onto their stocks, confident of still higher prices. We quote gross tons delivered in the Pittsburgh district, including Monessen, Steubenville, Brackenridge and Follansbee, as follows:

| | |
|---|---|
| Heavy melting scrap | $12.75 to 13.25 |
| Rerolling rails | 13.00 to 13.50 |
| Malleable | 12.00 to 12.50 |
| Bundled, sheet scrap | 11.00 to 11.50 |
| Iron axles | 21.00 to 21.50 |
| Old iron rails | 15.00 to 15.50 |
| Stove plate | 9.00 to 9.50 |
| No. 1 wrought scrap | 12.50 to 13.00 |
| Old car wheels | 12.50 to 13.00 |
| Low phosphorus | 14.75 to 15.25 |
| Machine shop turnings | 9.75 to 10.25 |
| Cast borings | 9.50 to 9.75 |
| No. 1 cast scrap | 12.50 to 12.75 |

# CHICAGO

## Improvement in Pig Iron---Finished Prices Firmer

Office of THE IRON TRADE REVIEW, 1328 Monadnock Blk., March 19.

The iron and steel trade in the west is making progress in spite of deterring influences, in which the weather has not been the least important. A broader demand for finished material is in evidence and some actual improvement in the pig iron situation has taken place. Fabricating contracts reported in the west last week total nearly 9,000 tons. Prices are firmer, but in most instances are not quotably higher. The mills are catching up somewhat on deliveries of plates and structurals, but considerable tonnage for prompt shipment is going east for rolling.

**Pig Iron.** — The Grand Crossing Tack Co. has come into the market for upwards of 2,000 tons of basic for delivery during April and May. There is also considerable activity in the market for charcoal iron. One prominent interest reports inquiries aggregating 7,000 tons in all, including 1,500 tons from a car wheel manufacturer. Charcoal prices are now on a firmer basis in the Chicago territory.

There has not been any great increase in foundry buying in the west, although the market on foundry grades is stronger, due to the activity which has developed in the east. A Chicago Heights foundry has purchased 400 tons of northern iron. An Illinois manufacturer has bought 1,000 tons of southern No. 2, for delivery over the second quarter, on a basis of $10.50, Birmingham. There is considerable inquiry for southern iron for last half shipment and some sales have been made at $14.85, Chicago. Most furnaces, however, are reluctant to quote for delivery beyond July 1.

The following prices represent the market for Chicago delivery, except northern foundry and malleable Bessemer, which are quoted, f. o. b. local furnaces:

(First Half Shipment.)

| | |
|---|---|
| Lake Superior charcoal | $16.50 |
| Northern foundry No. 2 | 14.00 |
| Southern foundry No. 2 | 14.85 |
| Southern silveries, 5 per cent silicon | 15.60 |
| Jackson Co. silveries, 8 per cent | 17.40 |
| Malleable Bessemer | 14.00 |
| Alabama basic | 14.85 |

**Billets.**—The local makers have withdrawn their quotations and the demand is being filled by mills situated in Ohio and western Pennsylvania. Business is fair, but prices locally are not as good as they are in the east. We quote for Chicago delivery as follows: Open-hearth forging billets, $27, and re-rolling billets, $22.60.

**Merchant Bars.**—The consumption of steel is broadening and increasing. Specifications, therefore, remain at a high point. There is considerable firmness in the market for steel bars, although tonnage is still available at 1.25c, Chicago. Machinery steel, shafting and other more highly finished materials are somewhat firmer than plain bars. Bar iron mills are enjoying better business and their attitude is firmer. Iron, however, is not quotably higher.

We quote, f. o. b. Chicago, as follows:

Bar iron, 1.15c to 1.20c; hard steel bars, rerolled, 1.15c to 1.20c; soft steel bars, bands and small shapes, 1.25c to 1.33c, base; hoops, 1.48c; smooth finished machinery steel, ¾ inch and larger, 1.78c; shafting 60 per cent off list for carload lots, 55 per cent off for less than carloads.

On iron and steel from local stock, we quote as follows:

Bar iron, 1.50c to 1.60c per pound base; soft steel bars, 1.50c to 1.60c per pound base; soft steel hoops, 1.80c to 1.90c, full extras.

**Structural Material.**—Mild weather has returned and it is hoped by fabricators that it will be permanent. Lettings in the west last week were heavy, amounting to 8,879 tons. Railroad business, as has been the case for some time past, constitutes a large share of the current orders. The American Bridge Co. has taken 3,000 tons for various bridges from the Chicago, St. Paul, Minneapolis & Omaha railway and has also closed a contract for 2,000 tons for the Lincoln building, Chicago, and for 400 tons for eight truss spans over the Santa Maria river, in San Luis Obispo county, Cal. The contract for the marking and shipping building, 992 tons, at the Duluth plant of the Minnesota Steel Co. has also been let to the American Bridge Co. The McClintic-Marshall Construction Co. has been awarded 1,375 tons by the Mississippi River Power Co. for a power station at Keokuk, Ia. The Worden-Allen Co. has taken 412 tons for a blacksmith and plow shop to be built by the Janesville Machine Co., Janesville, Wis. The W. D. Boyce Co., Chicago, will make an addition to its building on Dearborn avenue, requiring 2,000 tons of structural material. A similar amount is pending for a new building on the Green property, at the corner of Monroe and Dearborn streets, Chicago.

We quote mill prices, f. o. b. Chicago, as follows:

Beams and channels, 15 inches and under, 1.30c to 1.35c. For extras, see Pittsburgh report.

Plain material out of store is as follows:

All angles, 3 inches and larger, including 6 inches, $1.60 to $1.65 per 100 pounds; angles over 6 inches, $1.70 to $1.75 per 100 pounds, base; beams, 3 to 15 inches, inclusive, $1.60 per 100 pounds, base; channels, 3 inches and larger, $1.60 per 100 pounds, base.

**Rails and Track Fastenings.**—Makers have a comfortable tonnage on

their books, but there has been little additional business placed recently. Prices on track supplies are firm, but have not advanced appreciably in this market. The light rail business continues quiet.

We quote, light rails, f. o. b. Chicago, and track fastenings, f. o. b. Joliet, as follows:

Light rails, carloads, 40 to 45-pound, 1.16c to 1.20½c; 30 to 35-pound, 1.19½c to 1.24c; 16, 20 and 25-pound, 1.20½c to 1.25c; 12-pound, 1.25c to 1.29½c.

Light section relayers, 45 pounds and under, subject to inspection, $21 to $23; standard section relaying rails, subject to inspection, $23.50 to $24.

Track fastenings, f. o. b. Joliet, angle bars, 1.50c; railroad spikes, 1.50c to 1.55c, smaller size spikes, 1.65c, base; track bolts with square nuts, 1.90c base.

**Plates.**—Delivery is still the paramount consideration with the local mills, but some progress is being made toward catching up on orders. On account of the inability of plants in this territory to accept much tonnage for prompt shipment, considerable business in plates is being placed in the east. The local market, however, is not quotable above 1.30c. The Wabash has let contracts for 300 cars and the Rock Island has placed 700 with the Standard Steel Car Co. The Chicago, Milwaukee & St. Paul will build 500 automobile cars in its own shops, in addition to 470 previously reported. The Wabash is in the market for four additional passenger coaches.

We quote, mill prices, f. o. b. Chicago, as follows:

Tank plates, ¼ inch thick, 6¼ to 100 inches wide, 1.30c to 1.35c. For extras, see Pittsburgh report.

Store prices are as follows:

Tank steel, ¼ inch and heavier, up to 72 inches wide, 1.60c.

**Sheets.**—The local interests are making some progress in their efforts to advance prices on galvanized sheets, but for the time being considerable business is being diverted to eastern mills that are willing to take orders at from 50c to $1 a ton under 2.85c, Pittsburgh, equivalent to 3.03c, Chicago, for No. 28 gage. Prices on black and blue annealed sheets are maintained with less difficulty.

We quote store prices, f. o. b. Chicago, as follows:

Blue annealed, No. 10, 1.90c; No. 12, 1.95c. Box annealed, No. 28, 2.30c. Galvanized, No. 28, 3.35c.

For mill prices, see Pittsburgh report. Freight to Chicago, 18 cents.

**Wire Products.**—Weather over the northwest has again turned mild and if there are no relapses a considerable rush of wire business may be expected. At present the market is moving along easily without special features. There is still some business going at 1.50c, base, for wire nails. Buyers are not especially enthusiastic over the new prices.

We quote, f. o. b. Chicago, as follows:

Wire nails, jobbers' carload lots, $1.78; retailers' carload lots, $1.88; retailers' less than carload lots, $1.98; painted barb wire, jobbers' carload lots, $1.78; retailers' carload lots, $1.88; retailers' less than carload lots, $1.98, with 30c for galvanizing; plain wire, jobbers' carload lots, $1.58; retailers' carload lots, $1.63.

**Merchant Pipe and Tubes.**—Makers of tubes operating mills in the west are dissatisfied with the price situation. As a consequence some mills are only running at 60 per cent capacity. The buyer finds no difficulty in placing his orders at attractive figures. The demand for merchant pipe is broadening somewhat and prices are firm. Galvanized pipe is especially strong.

We quote, store prices on merchant pipe and tubes, f. o. b. Chicago, as follows:

*Iron and Steel Pipe Basing Prices*

| | Steel. Black. | Steel. Galv. | Iron. Black. | Iron. Galv. |
|---|---|---|---|---|
| **Butt.** | | | | |
| ⅛ inch and ¼ inch. | 71.2 | 50.2 | 63.2 | 42.2 |
| ⅜ inch | 75.2 | 64.2 | 66.2 | 55.2 |
| ½ inch to 1½ inch. | 78.2 | 69.2 | 71.2 | 62.2 |
| **Lap.** | | | | |
| 2 inch | 76.2 | 68.2 | 68.2 | 60.2 |
| 4½ inch to 6 inch.. | 77.2 | 68.2 | 69.2 | 60.2 |
| **Card Weight.** | | | | |
| 7 inch to 12 inch... | 74.2 | 63.2 | 67.2 | 56.2 |
| **Extra Strong Plain Ends.** | | | | |
| **Butt.** | | | | |
| ⅛, ¼, ⅜ inch..... | 66.2 | 54.2 | 60.2 | 48.2 |
| ½ inch | 71.2 | 59.2 | 65.2 | 53.2 |
| 2 inch to 3 inch... | 76.2 | 64.2 | .... | .... |
| **Lap.** | | | | |
| 2 inch | 72.2 | 60.2 | 66.2 | 54.2 |
| 7 inch to 8 inch.... | 66.2 | 54.2 | 60.2 | 48.2 |
| **Double Extra Strong.** | | | | |
| **Butt.** | | | | |
| ½ inch | 59.2 | 47.2 | .... | .... |
| ¾ inch to 1¼ inch. | 62.2 | 50.2 | .... | .... |
| **Lap.** | | | | |
| 2 inch | 60.2 | 48.2 | .... | .... |
| 4½ inch to 6 inch.. | 61.2 | 49.2 | .... | .... |
| 7 inch to 8 inch.... | 54.2 | 42.2 | .... | .... |

*Tubes*

| | Lap weld Per cent. steel. | Charcoal iron. Per cent. | Shelby seamless. Per cent. |
|---|---|---|---|
| 1 inch | 39 | .. | 57½ |
| 1¼ to 2¼ inch..... | 55 | 40 | 35 |
| 2¾ to 3¼ inch..... | 65 | 50 | 46 |
| 3½ to 4½ inch..... | 67½ | 50 | 46 |
| 5 to 6 inch..... | 55 | .. | .. |

**Cast Iron Pipe.**—The United States Cast Iron Pipe & Foundry Co. has formally booked an order for 18,000 feet of 16-inch pipe at Wichita, Kan. It has also been awarded 1,600 tons of 30-inch water pipe at Seattle. Prices are unchanged.

We quote, f. o. b. Chicago, as follows:

Four-inch water pipe, $26.50; 6 to 12 inches, $24.50, larger sizes, $24; gas pipe, $1 a ton higher.

**Old Material.**—Prices have continued their upward trend and advances of 25c to 50c a ton on a number of items were recorded during the week. The movement is still restricted on account of the traffic situation, but is expected to improve. Further orders from the Corporation in this district are not expected for the time being. The Northern Pacific railway will sell 1,500 tons on March 22, and the Chicago & Eastern Illinois sold 500 tons on March 20. Steel angle bars are now quoted $10.50 to $11, Chicago, and shafting has advanced to $14.

We quote, for delivery in consumers' yards, Chicago, as follows:

*Gross Tons*

| | |
|---|---|
| Old car wheels | $13.00 to 13.50 |
| Old iron rails | 15.00 to 15.50 |
| Rerolling rails (5 ft. and over) | 12.50 to 13.00 |
| Old steel rails (3 ft. and under) | 11.75 to 12.25 |
| Frogs, switches and guards | 11.00 to 11.50 |
| Heavy melting steel | 11.00 to 11.50 |
| Shoveling steel | 10.50 to 11.00 |

*Net Tons*

| | |
|---|---|
| No. 1 R. R. wrought | $11.00 to 11.50 |
| No. 2 R. R. wrought | 10.00 to 10.50 |
| Arch bars and transoms | 13.75 to 14.25 |
| Knuckles, couplers and springs | 10.25 to 10.75 |
| Shafting | 14.00 to 14.50 |
| Iron car axles | 18.25 to 18.75 |
| Steel car axles | 15.50 to 16.00 |
| Locomotive tires | 13.50 to 14.00 |
| Dealers' forge | 8.75 to 9.25 |
| Pipe and flues | 8.25 to 8.75 |
| No. 1 cast | 10.75 to 11.25 |
| No. 1 busheling | 8.75 to 9.25 |
| No. 2 busheling | 6.25 to 6.75 |
| No. 1 boiler cut | 7.25 to 7.75 |
| Boiler punchings | 12.50 to 13.00 |
| Cast and mixed borings | 6.00 to 6.50 |
| Machine shop turnings | 6.50 to 7.00 |
| Railroad malleable | 10.50 to 11.00 |
| Agricultural malleable | 9.75 to 10.25 |
| Angle bars, splices, etc., iron | 12.75 to 13.25 |
| Angle bars, steel | 10.50 to 11.00 |
| Stove plate and light cast scrap | 9.75 to 10.25 |

## Brier Hill Steel Co. Selects Kennedy

Julian Kennedy, Pittsburgh, has been retained by the Brier Hill Steel Co., Youngstown, O., as consulting engineer for the proposed mill the company will erect in that city. As soon as plans under way are completed, Mr. Kennedy will take charge. Construction of the new buildings will be pushed rapidly. It is thought that at least eight open-hearth furnaces will be installed. The company has definitely decided on a capacity of between 1,000 and 2,000 tons a day.

Westinghouse Air Brake Co. has declared the regular quarterly dividend of 2½ per cent, an extra dividend of ½ per cent, and a special dividend of 1 per cent, payable April 10.

The Independent Pneumatic Tool Co., Chicago, has declared a regular quarterly dividend of 2½ per cent, payable April 10.

# CINCINNATI

## Ironton Furnaces Advance Prices---Pig Iron Stronger

Office of THE IRON TRADE REVIEW,
503 Mercantile Library Bldg., March 19.

**Pig Iron.**—Recent developments have given a decidedly better tone to the local pig iron market. Northern and basic irons are especially more active, the southern situation is somewhat firmer, and the inquiries and sales are larger than they have been for some time. Local dealers were notified today by Ironton furnaces that the price for northern foundry No. 2 had been advanced from $13 to $13.50, Ironton, and this quotation now prevails here, with almost certain probabilities of being more firmly established as the week progresses. The southern situation is also a little firmer on the $10.50, Birmingham basis, for Alabama irons, and sales are being made regularly at this figure. There is still iron in the south, however, that can be had on a $10, Birmingham, basis, and Virginia grades are quoted at both $10 and $10.50, Birmingham basis, the latter price prevailing. The decided tendency among furnaces not to allow dealers to quote into the second half on southern grades still prevails, despite the fact that some fairly good inquiries have appeared in the market extending on into July and August. This is not true to a certain extent with northern iron, and contracts which run into the third quarter are being made in some instances without any hesitancy. The constant rise in the price of furnace coke, and the inability to get coke at all in most cases, due to the scarcity of the product and poor railroad facilities, have developed certain disadvantages that, in a way, threaten to counterbalance the advantages to be gained by the better conditions lately realized in the pig iron market. Stocks in yards are reported being steadily reduced. Inquiries here include 1,000 tons of northern iron from a central Ohio melter, the delivery to extend into the third quarter; 6,000 tons of basic from a southern Ohio user, for third quarter shipment, that, under all probabilities, will be turned into a sale in a day or so; 5,000 tons of malleable iron for shipment into Michigan; 2,000 tons of basic for May and June shipment, from a southern Ohio melter, and 500 tons of southern iron to be delivered into the second half, from a central Indiana buyer.

The rolling mills at Middletown, O., has closed for from 12,000 to 15,000 tons of basic grades for second half delivery, a large part of the sale being made by local dealers. Other recent sales include from 5,000 to 6,000 tons of basic to a southern Ohio melter for third quarter delivery; 1,000 tons of northern foundry grades to a central Indiana melter for third quarter delivery, which was booked by a Columbus, O., furnace, and 1,000 tons, also of northern grades, to a user in the same locality for the same delivery, and which was taken by Toledo, O., and Ironton furnaces. Both these sales were made on a $13, Ironton, basis, but were closed before the recent advance to $13.50 was made. We quote Cincinnati prices as follows, with freight rates from Birmingham, $3.25, and from Ironton, $1.20:

| | |
|---|---|
| Southern foundry No. 2 | $13.25 to 13.75 |
| Southern foundry No. 3 | 12.75 to 13.25 |
| Southern foundry No. 4 | 12.50 to 12.75 |
| Southern gray forge | 12.50 to 12.75 |
| Mottled | 12.25 to 12.50 |
| Southern No. 1 soft | 13.75 to 14.25 |
| Southern No. 2 soft | 13.25 to 13.75 |
| Standard southern car wheel | 25.25 to 25.50 |
| Northern No. 2 foundry | 14.70 |
| Northern No. 3 foundry | 14.20 |
| Northern No. 4 foundry | 13.95 to 14.20 |
| Jackson co. 8 per cent silicon | 16.45 to 16.95 |

**Coke.**—The prices on practically all grades of coke have risen during the past week, and the market is uncertain, with no probabilities of its settling at the present. Prices vary according to the conditions of the sale, depending as to how much the dealer has on hand, how badly the buyer wants it, and the possibilities of an early shipment. Because of this condition, definite quotations cannot be made. Connellsville foundry coke has sold during the week all the way from $2.75 to $3.25, and other grades vary accordingly. Conditions of shipment, instead of improving, are, if anything, becoming worse. Coke is still being shipped from the Connellsville region in rack cars, as the supply of box cars has been practically exhausted for some time. Sales are mostly in carload lots accordingly as the coke can be secured, but several good contracts have been recently closed. Buyers are demanding more than the usual requirements, asking for prompt shipment, as there is a growing tendency to store as large supplies as possible, which has been brought about by the rumors of a strike in the coal fields. As a rule, however, they are not getting all that they ask for. There is still a decided shortage of ready coke, a condition that has prevailed for some time. We quote as nearly as possible from the leading coke producing districts as follows:

| | Prompt shipment. | Contract second half. |
|---|---|---|
| **Connellsville district:** | | |
| Foundry coke | $2.75 to 3.25 | $2.65 to 3.00 |
| Furnace coke | 1.90 to 2.25 | 1.85 to 2.25 |
| **Wise county district:** | | |
| Foundry coke | $2.15 to 2.45 | $2.15 to 2.45 |
| Furnace coke | 1.90 to 2.25 | *Sliding [scale basis |
| **Pocahontas district:** | | |
| Foundry coke | $2.00 to 2.50 | $2.00 to 2.50 |
| Furnace coke | 1.65 to 1.90 | 1.65 to 1.90 |
| **New river:** | | |
| Foundry coke | $2.50 to 3.45 | $2.50 to 3.40 |
| Furnace coke | 2.10 to 2.25 | 2.10 to 2.25 |

*Sliding scale basis means $1.60 for coke based on $9, Birmingham, for pig iron, with an advance of 16 2-3 per cent of the amount over $9 which pig iron is quoted. This is the usual basis. Other forms of sliding contracts are also made.

**Finished Material.**—Steel bars and structurals are generally reported a little firmer, and the prospects of a good buying movement this spring seem better. The former are quoted at from 1.10c to 1.15c, with sales reported at both prices. Structurals are bringing from 1.15c to 1.20c. The local sheet mill still adheres to its recent advance of from $1 to $2 a ton on sheets, and reports sales unimpaired at these figures, with a general good business prevailing. Nothing new has developed regarding the several large structural items pending here, namely, the new Gibson House, the new Union station, and the new office building to be located on the site of the present Johnson building, except from the fact that the Gibson House project is reported to have been recently financed. For mill quotations, see Pittsburgh prices.

The warehouse situation has not changed materially since last report. Several dealers report very good business along certain lines, but as a whole, sales are fairly well distributed among the different supplies on hand. A good lot of steel bars was recently sold at the quoted price, and the demand for concrete reinforcing bars seems to be improving as contractors are gradually beginning work. We quote warehouse prices, f. o. b. Cincinnati, as follows:

Steel bars, 1.60c base; iron bars, 1.55c to 1.60c base; structurals, 1.70c base; plates, ¼ inch and over, 1.70c base; sheets, blue annealed, No. 10, 1.90c base; rivets, cone head, 2.25 base; cold rolled shafting, 60 per cent discount; boiler tubes as follows: 1¼ to 2¼ inch, 61 per cent discount; 2½ inch, 63 per cent discount; 2¾ to 3¼ inch, 66 per cent

discount; 3½ to 4½ inch, 68 per cent discount; and 5 to 6-inch, 61 per cent discount; and soft steel cold twisted concrete bars, cut to length as follows: ¾ inch square and larger, 1.70c; ⅝ inch square and larger, 1.80c; ½ inch square and larger, 1.90c; ⅜ to ⅝ inch square and larger, 2.10c; ¼ inch square and larger, 2.20c to 2.30c.

**Old Material.**—Aside from a slight advance in steel melting scrap and bundled sheet iron, the local market is without any change. There is still a fair demand for relaying rails, with prices varying according to the conditions of the sales. No large sales or lists pending are reported, and dealers as a rule are complaining about the dullness of the market. Hilb & Bauer, prominent local scrap iron dealers, who recently purchased the plant of the old Licking Rolling Mill, Covington, Ky., are still undecided as to whether to make extensive improvements and operate it or to convert all available material into scrap. According to a summation of reports, prices are as follows:

*Gross Tons*

| | |
|---|---|
| Old iron rails | $12.00 to 13.00 |
| Old steel rerolling | 11.00 to 11.50 |
| Old iron axles | 18.00 to 18.50 |
| Steel melting scrap | 9.50 to 10.50 |
| Car wheels | 10.50 to 11.00 |

*Net Tons*

| | |
|---|---|
| Old No. 1 R. R. wrought | $10.50 to 11.50 |
| No. 1 machinery | 10.00 to 10.50 |
| No. 1 busheling | 8.00 to 9.00 |
| Stove plate | 6.25 to 7.00 |
| Machine shop turnings | 5.50 to 6.00 |
| Cast borings | 4.25 to 5.00 |
| Grate bars | 6.00 to 7.00 |
| Sheet iron, bundled | 6.75 to 7.75 |
| No. 1 cast scrap | 10.00 to 10.50 |
| Heavy turnings | 6.00 to 7.00 |

# CLEVELAND

## Contract for Ore Carrying---Season Rate Not Fixed

Office of THE IRON TRADE REVIEW, Penton Bldg., March 19.

**Iron Ore.**—Considerable excitement has been caused by the announcement of Corrigan, McKinney & Co. that they had closed contracts on Monday to move a million tons of ore at 55 cents from the head of the lakes, based on an unloading charge of 15 cents, making a rate of 40 cents, net, to the vessels. This is a reduction of 5 cents from the prevailing carrying charge of 1911, although some ore was moved at a net rate of 40 cents last year. It is further stated that the agreement with Corrigan, McKinney & Co. provides that if the unloading charge is reduced, as it will be, to at least 8 cents, the vessel rate is to fall correspondingly. In that event, the vessel will get no benefit from any reduction in handling charges. All vessel men questioned about the matter denied that they had made any contract to carry ore, and declared that they would not do so at the net rate of 40 cents. Hence, is was impossible to ascertain with whom Corrigan, McKinney & Co. made their contracts. It is, however, by no means settled that 40 cents will be the net rate, and there is apparently good ground for vessel men hoping that it will be higher.

Sentiment in regard to ore prices has not yet crystallized. In some quarters, the opinion is expressed that the cost to the consumer will be 50c less than it was last year, but that a considerable part of this reduction will be due to decreases in carrying and dock charges.

On base ores with the guarantee of 55 per cent on old range and Mesabi Bessemer, and 51½ per cent on old range and Mesabi non-Bessemer, we quote as follows: Old range Bessemer, $4.50; Mesabi Bessemer, $4.25; old range non-Bessemer, $3.70; Mesabi non-Bessemer, $3.50.

**Pig Iron.**—Inquiry for a number of round tonnages of basic, 1,500 tons of malleable from an eastern consumer, and small lots of foundry iron are pending, and prices are firm. While prices in Cleveland are not quotably higher, at least one furnace company is asking from 25 to 50 cents more for iron at its furnace. We quote, delivered in Cleveland for the first half of this year, as follows:

| | |
|---|---|
| No. 1 foundry | $13.75 |
| No. 2 foundry | 13.25 |
| No. 2 southern | 14.35 |
| Gray forge | 12.50 |
| Bessemer | 15.15 |
| Lake Superior charcoal | 16.50 |
| Jackson co. 8 per cent silvery | 17.05 |

**Coke.**—Owing to the fears of a strike in the coal mines and the scarcity of cars, prices of foundry coke for prompt delivery have advanced sharply and from $3 to $3.15 is being paid. Very little contracting is being done and $2.40 is the usual price for future delivery. Stock coke is selling at $2.15, and is extremely scarce. We quote:

Connellsville furnace coke, $2.00 to $2.25 for prompt delivery, and $2.00 to $2.25 on contract; Connellsville foundry coke, $3.00 to $3.15 for prompt, and $2.40 on contract.

**Finished Material.**—While no noteworthy contracts have been placed during the past week, there has been a very large number of small orders aggregating a good tonnage. The Carnegie Steel Co. has advanced its quotation on bars to 1.15c, Pittsburgh, and on shapes and plates to 1.20c, Pittsburgh, and is following a very conservative policy in regard to contracts, declining to contract beyond July, except, possibly, on very desirable business. Independent companies, as a rule, are quoting 1.10c on bars and 1.15c on plates and shapes as their minimums. They are also cautious about making extended contracts. Very little contracting has been done for the third quarter and neither dealers nor sellers seem to be anxious to contract for delivery after July 1.

**Old Material.**—The warmer weather and thaw of the past week has brought out a quantity of scrap of all grades and the local market is apparently surfeited with offers of material from all directions. Weakness is very apparent locally, especially in all grades of rolling mill material, including busheling and No. 1 wrought. The only movement is in heavy steel and that is on old orders, shipments continuing to be made outside the city. Borings and turnings have advanced slightly. The Cleveland market lacks snap. Railroad lists which closed the past week put material in the hands of dealers which they say they wish they did not have, at least in the quantity secured. We quote, gross tons. f. o. b. Cleveland, as follows:

*Gross Tons*

| | |
|---|---|
| Old iron rails | $14.00 to 14.50 |
| Old steel rails (under 6 ft.) | 11.25 to 11.75 |
| Old steel rails (over 6 ft.) | 11.50 to 12.00 |
| Relaying rails | 19.50 to 20.00 |
| Old car wheels | 11.50 to 12.00 |
| Old steel boiler plate | 9.50 to 10.00 |
| Malleable iron (railroad) | 11.00 to 11.50 |
| Steel axles | 17.00 to 17.50 |
| Axle turnings | 8.50 to 9.50 |
| Malleable iron (agricultural) | 10.00 to 10.50 |
| Heavy steel | 11.00 to 11.50 |
| Country mixed steel | 9.00 to 9.50 |
| Bundled sheet scrap | 7.50 to 8.00 |

*Net Tons*

| | |
|---|---|
| No. 1 R. R. wrought | $11.00 to 11.50 |
| No. 1 busheling | 9.00 to 9.50 |
| No. 1 machine cast | 10.75 to 11.25 |
| No. 1 dealers' wrought | 9.00 to 9.50 |
| Machine shop turnings | 7.25 to 7.50 |
| Pipes and flues | 8.00 to 8.50 |
| Wrought drillings | 7.25 to 7.50 |
| Stove plate | 9.00 to 9.50 |
| Cast borings | 7.00 to 7.25 |
| Wrought iron piling plate | 15.50 to 16.00 |
| Wrought iron arch bars | 14.50 to 15.00 |

# PHILADELPHIA

## Prospect of Strike in Coal Mines Causes Anxiety

Office of THE IRON TRADE REVIEW,
Philadelphia, March 19.

The eastern iron and steel market has reached a most interesting stage. The rising coal and coke values and the unsettled labor condition at the mines have filled the air with uncertainty as to the future course of pig iron and have led to many conjectures, some of which afford extravagant predictions on prices. Furnace interests are all acting with great caution; some are advancing prices while others decline to quote at all. The tone of the eastern finished market continues notably more optimistic and favorable. Eastern mills are booking on a heavier scale and prices show distinct hardening. Scrap is moving slowly, but prices are firm.

**Pig Iron.**—Market conditions have become quite tense, especially upon the side of makers, owing to the advancing coal and coke markets and the uncertainties surrounding future costs. Upon all sides extreme caution among producers is being shown. Some furnacemen are declining to quote while others are advancing prices in a manner practically equivalent to a withdrawal from the market. The Virginia Iron, Coal & Coke Co., the largest Virginia interest, withdrew all prices in the week, but has exhibited a willingness to accept some prompt orders at $13 and $13.25 for No. 2X at the furnace, or advances of 75 cents to $1 a ton. Other Virginia makers who are acting more conservatively will still sell at $12.50, furnace. Some eastern Pennsylvania makers are temporarily dropping from the market. Buyers continue to take quite a complacent view of things and are moving slowly though they are showing keen interest in their coal and coke supplies. They are declining to pay the advances asked for iron and their inquiry in this territory has not increased greatly under the unusual conditions that have arisen. The market accordingly, though much aroused, is not active and the true level of values is not established. Some furnace interests which are not fully covered on forward coke announce their intention to blow out if fuel costs continue on the present basis.

A Virginia pipe maker is in the market for 4,000 to 5,000 tons of lower grades and other pipe shops in this district would take round blocks upon the basis of recent offers which makers are declining. An inquiry for 900 tons of forge is current. There seems to be more promise for basic tonnage as eastern mills are consuming more heavily and some tentative interest is being shown in forward iron by at least one important consumer. Eastern Pennsylvania makers are figuring upon 5,000 tons of basic for shipment into Germany by way of Rotterdam or Antwerp. A Philadelphia consumer has closed for 1,000 tons of malleable from a lake maker at about $15.30, delivered. Southern makers have been somewhat exercised by some large-sized inquiry for export, but in some quarters this is not being taken seriously.

We quote for prompt and second quarter shipment at Philadelphia and vicinity as follows, with handling and switching charges from docks added for Virginia and southern iron:

| | |
|---|---|
| No. 1X foundry | $15.25 to 15.50 |
| No. 2X foundry | 14.75 to 15.25 |
| No. 2 plain | 14.50 to 14.75 |
| Standard gray forge | 14.00 to 14.25 |
| Basic | 14.25 |
| No. 2X Virginia | 15.75 to 16.00 |
| No. 2 southern | 14.75 to 15.00 |
| Standard low phosphorus | 19.00 to 19.25 |

**Coke.**—Price advances continue to be steadily made. Owing to the high levels, there is but little furnace coke buying in the east. Some running month-to-month contracts have been advanced to $2 and spot coke has been offered in the week at $2.10 to $2.15, ovens. An eastern steel company is inquiring for 5,000 tons for April. In foundry coke, one of the largest western Pennsylvania makers has been actively renewing its contracts expiring July 1, to July 1, 1913, at former prices of $2.40, ovens. Latrobe makers are now asking from $2.75 to $3, ovens.

**Finished Material.**—A more optimistic feeling continues to work its way through the eastern finished market. In some cases this is based on substantial improvement in tonnage entered, which is causing several eastern makers to put in service this week additional steel-making capacity. Some eastern plate makers report a marked increase of tonnage entered and this week operations with one of them have been raised to 80 per cent. The eastern market generally seems to be broadening in an encouraging fashion.

The sharp need of quick shipments, suggesting the low stocks in buyers' hands, continues marked. Prices of finished lines continue to harden and though quotations are still uneven and show concessions, these cases are not so numerous and refer usually to the exceptionally attractive orders. Steel bars in large lots have sold in recent cases on a basis of 1.05c, Pittsburgh, but an instance is noted where all leading bar makers competed for a fair-sized order and uniformly quoted 1.10c, Pittsburgh. Plates and shapes continue at 1.10c to 1.15c, Pittsburgh, or 1.25c to 1.30c, Philadelphia. Some eastern makers quote the higher level as their minimum. Spike and bar iron prices in the east still show weakness.

The Jones & Laughlin Steel Co. has taken 1,800 tons of plates for the Panama canal and an eastern mill will furnish 2,000 to 2,500 tons of plates to an eastern Pennsylvania bridge builder for export. The 3,800 tons of twisted steel bars for the viaducts over the Bush and Gunpowder rivers near Baltimore have gone to the Cambria Steel Co. An eastern steel maker has placed 1,000 tons of steel bars and 500 tons of billets.

In structural material, the Phoenix Bridge Works has 700 tons for the Palmetto building, Columbia, S. C. Bids have gone in for 700 tons for an office building at Richmond for the Virginia Railway & Power Co., for which Bethlehem sections are specified, and will soon be asked on 800 tons for the Wallerstein hotel, Richmond, the general contract for which has already been awarded. A telephone exchange building, this city, will soon be out.

Eastern Pennsylvania steel makers are negotiating on a lot of 5,000 tons of rolling billets for Glasgow, Scotland. The eastern billet market seems firmly based on $20 and $25, Pittsburgh, respectively for rolling and forging billets and sales on this basis are reported.

We quote, delivered in Philadelphia and vicinity, as follows:

Structural shapes, 1.25c to 1.30c; steel

**plates, 1.25c to 1.30c; steel bars, 1.25c; common bar iron, 1.20c to 1.25c; cut nails, 1.65c to 1.70c; blue annealed sheets, No. 10 gage, 1.50c to 1.55c; 4 x 4-inch open-hearth rolling billets, $22.40 to $23.40; forging billets, $26.40 to $27.40. Extras shown under Pittsburgh report.**

**Old Material.**—Sizable sales of old material are still lacking, but the tone of the market remains improved. First grade heavy melting steel in small lots was sold this week at $12.50, delivered in eastern Pennsylvania, or an advance of 25 cents, and some merchants are holding this as their minimum price. Some eastern consumers have been offering $12.50, delivered, for strictly No. 1 railroad steel, but the free supply of this quality is small. Owing to the better market in the Pittsburgh district, most of the steel scrap from neutral points is being directed there. Brokers will pay $12.75 and even $12.90 for steel delivered in the Pittsburgh district. No. 1 railroad wrought has been sold in small quantities at $14.75, delivered in the east. Car wheels are better held. There is little action in other grades.

We quote, gross tons, delivered in eastern Pennsylvania and New Jersey consuming territory, as follows:

| | |
|---|---|
| Old iron rails | $15.75 to 16.25 |
| Old steel rails (rerolling) | 13.00 to 13.50 |
| No. 1 heavy melting steel | 12.00 to 12.50 |
| Old car wheels | 12.25 to 12.75 |
| Old iron axles | 22.00 to 23.00 |
| Old steel axles | 16.75 to 17.00 |
| No. 1 railroad wrought | 14.25 to 14.75 |
| Wrought pipe | 11.75 to 12.25 |
| Cast borings | 8.50 to 9.00 |
| Machine shop turnings | 9.00 to 9.50 |
| Heavy cast | 12.50 to 13.00 |
| Malleable | 11.50 to 12.00 |
| Stove plate | 10.00 to 10.25 |

Freight rates per ton on scrap from Philadelphia to principal eastern consuming points are: $0.60 to Ivy Rock, Pa.; $0.65 to Phoenixville, Pa.; $0.80 to Coatesville, Pa.; $0.85 to Bethlehem, Pa., Reading, Pa., and Roebling, N. J.; $1.10 to Pottsville, Pa., Lebanon, Pa., and Columbia, Pa.; $1.20 to Harrisburg and Steelton, Pa.; $1.40 to Milton, Pa.

# NEW YORK

## Pig Iron Conditions Confused by Threatened Strike

Office of THE IRON TRADE REVIEW, 1115 West Street Bldg., March 19.

**Iron Ore.**—Some eastern ore sellers report an increased inquiry for various grades of ores, some of which is apparently being put out with the thought of blowing in additional furnaces should pig iron prices advance. Sales are few, however, and it is thought that in the uncertainties over the coke situation there is little inducement at this juncture for idle furnaces to resume.

**Pig Iron.**—The situation in pig iron at the moment is somewhat confusing and the real strength of conditions is not well defined. Buyers continue to be stirred to action on a considerable scale by the dangers of the impending coal labor troubles, but they are not disposed, except in isolated cases, to pay the advanced level at which some of the makers have placed their schedules. The situation with the producers themselves also manifests considerable dissimilarity. Some have withdrawn from the market, others have advanced prices, but in the case of one or two sellers, iron for third quarter and last half is still being offered at former prices.

A Newark foundry took 1,000 tons of eastern Pennsylvania No. 2X for third quarter at $14.75, delivered, and other makers in the same territory have been offered equivalent figures. On the other hand, some small sales of Virginia iron have been made at $13.25, furnace, for No. 2X, or an advance of $1 a ton and some sizable lots of Buffalo iron have gone at $14.25, for No. 2X, a higher level. A sale of 500 tons of eastern Pennsylvania No. 2 plain at $14.25, furnace, is noted. Most of the larger inquiries noted a week ago have been disposed of and there is still pending in eastern territory from 15,000 to 20,000 tons. The leading pump interest has bought several thousand tons of eastern grades against its recent inquiries. New Jersey stove makers are in the market for 2,000 to 3,000 tons of high silicon No. 2X for forward shipment running into last half. Southern and Virginia producers have been somewhat excited during the past week by the receipt of an inquiry for 100,000 tons of pig iron for shipment abroad. Details of this inquiry have not been made public, but in some quarters the matter has not been taken very seriously. We quote for prompt and second quarter shipment at tidewater, Virginia and southern iron being quoted at New York docks, as follows:

| | |
|---|---|
| Northern foundry No. 1 | $15.20 to 15.45 |
| No. 2 foundry | 14.70 to 15.20 |
| No. 2 plain | 14.50 to 14.70 |
| No. 2 Virginia | 15.30 to 15.85 |
| No. 2 southern foundry | 14.50 to 14.75 |
| Malleable | 15.25 to 15.50 |
| Gray forge | 14.00 to 14.25 |

**Ferro-Alloys.**—Although practically all the English makers have proclaimed their withdrawal from the market because of labor conditions, it is evident that some ferro-manganese is still being bought at the former price of $41, seaboard. There is more apprehension among consumers as to the possibilities of shortages in this alloy as the stocks on hand are light and incoming tonnage is not heavy. An eastern steel maker has taken 800 tons for delivery over the remainder of the year and a lake consumer has bought 600 tons, both at the $41 price. A Canadian steel works has been inquiring for 5,000 to 10,000 tons of spiegeleisen, but is understood to have placed this business with English sellers. We quote 80 per cent standard ferro-manganese at $41, seaboard, and 50 per cent ferro-silicon at from $68 to $72, Pittsburgh.

**Cast Iron Pipe.**—The volume of new business before pipe makers continues very good and the outlook is encouraging, although prices still drag. The city of Rochester has closed for 3,000 tons of pipe and Reading, Pa., is opening this week on a small letting. The 6,650 tons for Manhattan, awarded the Beaver Engineering & Construction Co. under a contractor's letting, is reported to have gone to the Camden maker. We quote 6-inch pipe at from $22 to $23, f. o. b. New York, in carload lots.

**Rails and Track Material.**—Some of the largest western systems are now actively negotiating for their forward requirements of rails and some large tonnages are on the verge of being placed. The Wabash railroad, in addition to placing 20,000 tons with the Illinois Steel Co., as reported, has awarded 15,000 tons to the Lackawanna Steel Co. The New York, New Haven & Hartford has prepared specifications for 18,000 to 20,000 tons of rails to fill its year's requirements, of which 11,000 tons will go to the Pennsylvania Steel Co. and the remainder to the Beth-

lchem Steel Co. Open-hearth rails exclusively are specified by this system this year. Its former purchases have usually been of Bessemer quality.

**Finished Material.**—The sentiment of the market is clearly improved and the situation as a whole has been made more promising. The price hardening process, however, makes progress very slowly in this market, as there is still considerable variance among producers as to the backlog of tonnage on mill books. Plates and shapes continue quotable at from 1.10c to 1.15c, Pittsburgh, or 1.26c to 1.31c, New York, and these delivered prices have been recently shaded by mills with short freights. Steel bars are usually quoted at 1.10c. The general tonnage of the market shows some increase.

It cannot be said there is much, if any, improvement in fabricated prices. Most of the eastern shops have little tonnage booked beyond two months ahead and it will take a large amount of work to fill all comfortably. Offerings at present are only fair and accordingly competition for awards is keen.

An interesting echo of the restraint put upon the operations of English shops by present strike conditions is the inquiry being sent to this side by British bridge builders. Different eastern shops have been approached by English bridge manufacturers with the thought of diverting some of their tonnage to this country if present conditions are not relieved. The recent placing of at least one foreign bridge contract with an eastern shop is thought to have resulted from this situation.

Railroad tonnage in structural lines is still light. The Long Island railroad this week took bids on an indefinite tonnage for grade crossing work, the quantity of which will be determined later, but it will reach at least 2,500 tons. The Virginian railway has placed 400 tons with the Roanoke Bridge Co. for a shop building at Princeton, W. Va. Some small bridge work is pending.

The Hay Foundry & Iron Works has taken 2,000 tons for the Lewisohn on Fortieth street, this city; the Irving Iron Works has 750 tons for the Second National Bank building, New Haven, Conn.; the Geo. A. Just Co. has 1,500 tons for a theatre and office building at Forty-seventh and Broadway for the Palace Realty Co.; Levering & Gerrigues, 800 tons for the Y. W. C. A. building, Newark, N. J.; Hinkle Iron Works, 850 tons for a mercantile building on West Twenty-fifth street, this city; the American Bridge Co., 600 tons for a loft on Twenty-third street; the A. E. Norton Co., 250 tons for a loft on West Broadway; the New England Structural Co., 200 tons for a power house at Pawtucket, R. I., and the American Bridge Co., 200 tons for an addition to the Detroit Gas Works. Bids have gone in for a factory building for the Phillips-Jones Co. at Walnut avenue and 134th street east, to require 1,000 tons. A loft at Fourteenth street and Seventh avenue to require 1,200 tons is understood to have gone to Milliken Bros., Inc. Plans will soon be out for a 22-story building at Fortieth street and Broadway to require 2,500 tons or more.

Plans have been issued for the new Stern store on Sixth avenue between Forty-second and Forty-third streets, to require 6,000 to 7,000 tons. The award of the Bellevue hospital addition, this city, 2,500 tons, which had been verbally made recently as announced to a local fabricator has again been reconsidered and final action is still open. The Barney & Smith Car Co. has taken 29 steel coaches for the Western Maryland railroad. We quote delivered at New York tidewater, as follows:

Plain structural shapes 1.26c to 1.31c; tank plates, 1.26c to 1.31c; steel bars, 1.26c; common iron bars, 1.25c to 1.30c; plates and shapes from store, 1.70c to 1.80c; extras as shown under Pittsburgh report.

**Old Material.**—There is more speculative interest in the market due to the better middle western markets, but eastern consumers are not materially increasing their purchases and local values are little changed. New York brokers have been buying steel this week for eastern shipment at $9.70 New York, and have taken some small orders from consumers at $12, delivered. Sentiment among holders of scrap continues more bullish. We quote gross tons, prices dealers will pay at New York tidewater, as follows:

| | |
|---|---|
| Old car wheels | $10.50 to 10.75 |
| Old iron axles | 16.00 to 16.50 |
| Old steel shafting | 13.75 to 14.25 |
| No. 1 heavy melt'g steel | 9.70 to 9.75 |
| No. 1 R. R. wrought | 11.75 to 12.00 |
| Wrought pipe | 9.25 to 9.50 |
| Cast borings | 6.00 to 6.50 |
| Mach. shop turnings | 6.75 to 7.00 |
| Heavy cast | 10.75 to 11.00 |
| No. 1 machinery cast | 10.00 to 11.25 |
| R. R. malleable | 9.25 to 9.75 |
| Stove plate | 8.00 to 8.50 |
| Grate bars | 6.50 to 6.75 |

Freight rates on scrap per ton to Steelton, Pa., Columbia, Pa., Pottsville, Pa., and Harrisburg, Pa., are $1.50 from Jersey City and $2.00 from New York; to Coatesville, Pa., Ivy Rock, Pa., Phoenixville, Pa., and Reading, Pa., $1.50 from Jersey City and $1.80 from New York; to Bethlehem, Pa., $1.10 from Jersey City and $1.60 from New York; to Roebling, N. J., $1.00 from Jersey City and $1.50 from New York; to Milton, Pa., $1.60 from Jersey City, and $2.00 from New York.

# BUFFALO

## Rapid Shipments of Pig Iron—Shapes Firmer

Office of THE IRON TRADE REVIEW,
Buffalo, March 19.

**Pig Iron.**—Shipments are going out fast on old contracts, the pressure being on both producers and consumers. Sales for the week amounted to about 10,000 to 12,000 tons on all grades, and the business under consideration to about 4,000 to 5,000 tons. The trend of prices has been slightly upward. There has been a strong demand for carload lots at full prices. Little of the inquiry has been confined to last half of the second quarter. The prices prevailing are, f. o. b. furnaces, within the range quoted:

| | |
|---|---|
| No. 1X foundry | $14.00 to 14.50 |
| No. 2X foundry | 14.00 to 14.25 |
| No. 2 plain | 13.75 to 14.00 |
| No. 3 foundry | 13.50 to 13.75 |
| Gray forge | 13.25 to 13.50 |
| Malleable | 13.75 to 14.25 |
| Basic | 14.00 to 14.50 |
| Charcoal | 15.50 to 17.25 |

**Finished Material.**—The market during the week has strengthened and prices have stiffened. The general tone in all lines is better than it has been for some weeks. Bars are being quoted at 1.10c to 1.15c, Pittsburgh base, and shapes and plates at 1.15c to 1.20c base, with one interest holding flat at the latter figure, irrespective of tonnage or favorable delivery. Iron bars are bringing 1.25c, base, and spikes, in carload lots, 1.40c, base.

The A. E. Stephens Co. is low bidder on the general contract for the Albany high school, requiring about 1,100 tons, but the contract has not yet been awarded. Plans are ready for the new $400,000 state normal school at Buffalo, by State Architect Franklin B. Ware, Albany; $100,000 for initial work just appropriated by state. Architects Wood & Bradley, Buffalo, are about ready for figures on the Buffalo Natural Gas Fuel Co.'s new building, requiring about 1,000 tons. George Kellogg Structural Co. is low bidder for C. B. Hill building, Buffalo, requiring about 150 tons. Specifications are out this week for the Foster-Milburn Co. new building, Buffalo, about 350 tons. The Durolithic Co. was given the contract for the Buffalo Sled Co.'s three-story and basement, 65 x 300 addition to

factory. The Niagara Silk Mills Co., Niagara Falls, N. Y., is to build a three-story and basement 60 x 300 building. Fred W. Sarr, Fulton, N. Y., has been given the general contract on section 10-B New York state barge canal; considerable concrete and reinforcing bars will be required.

**Old Material.**—There has been an upward trend in the past week and a decided change for the better in all lines of scrap, led by an increasing demand for heavy melting steel, turnings and borings. Dealers are holding firmly to the modified range of prices quoted below, on gross tons, f. o. b. Buffalo. Consignments are being moved more freely. There is little or no congestion, embargoes are raised, and stocks on the yards are accessible. The prices are:

| | |
|---|---|
| Heavy melting steel | $12.50 to 13.25 |
| No. 1 railroad wrought scrap | 14.00 to 14.25 |
| No. 1 R. R. and mch. cast scrap | 13.50 to 14.00 |
| Old steel axles | 18.50 to 19.25 |
| Iron axles | 22.00 to 22.50 |
| Car wheels | 11.75 to 12.00 |
| Railroad malleable, scrap | 12.50 to 12.75 |
| Wrought iron and soft steel turn | 7.50 to 7.75 |
| Cast iron borings | 6.75 to 7.25 |
| Low phosphorus steel scrap | 15.75 to 16.00 |
| Old iron rail | 15.00 to 15.50 |
| Tank iron | 10.00 to 10.25 |
| Boiler plate, sheared | 13.75 to 14.25 |
| Pipe and tank | 9.50 to 10.00 |
| Stove plate | 9.75 to 10.00 |
| Sheet iron | 7.00 to 7.50 |
| Locomotive grate bars | 11.00 to 11.25 |

The New York State Steel Co.'s blast furnace, Buffalo, which has been out of blast for some months, will be relighted April 1. The company has thousands of tons of ore on its yards. At a recent meeting of the directors, Ernest Porter, former general sales manager, was elected president to succeed Spencer Kellogg, who held the office from the time of the death of President William H. Love, who died last November.

# BRITISH MARKET

## Coal Strike Causes Tremendous Losses

(*By cable.*)

*Birmingham, England, March 19.—The coal deadlock is inflicting unparalleled disasters to the iron and steel trade. Thousands of workers are starving. Many firms are advancing money or distributing food coupons to work people. Numerous orders are cancelled or transferred to Germany or Belgium when immediate delivery is imperative. All Derbyshire and Lincolnshire pig iron has been sold out. Heavy shipments are being made from Middlesbro through reduction of freights 50 per cent.*

*Hundreds of cargo steamers are being laid up. Iron and steel warehouses are cleared out, stopping many other consuming industries. The refusal of railways to carry ore and foundry coke is stopping mines and foundries. Most structural undertakings are now stopped. Relief committees are being formed throughout Middlesbro and the Black country to feed hungry children.*

Office of THE IRON TRADE REVIEW,
Prince's Chambers, Corporation St.,
Birmingham, Eng., March 9.

The end of the first week of the British coal strike finds the iron and steel industry so entirely crippled that there is practically no industry left worth speaking of. In the northeastern pig iron district, all but half a dozen furnaces are damped down, and the production reduced from 10,000 tons per day to 800 tons. It is probable that not a ton of iron will be made next week. Only once before has this happened in the Middlesbrough district,—in the year 1892, when the three months Durham miners' strike stopped all but three furnaces. The position has been aggravated by the preliminary shortness of fuel, which before the strike began, compelled a number of furnaces to go on a slack blast. There has probably never been so complete a stoppage in the history of the iron trade. In the South Staffordshire district, Messrs. Hickman, Ltd., have blown out two of their steel-making furnaces and have damped down the remaining three. The effect on the pig iron stocks has naturally been marked. There was a decrease of 12,000 tons during February, and the stocks have now been reduced to 500,000 tons. At present, shipments average about 2,000 tons per day. The February shipments beat all records, with two exceptions. The month's total was 106,000 tons. In the Barrow district all the furnaces are being damped down. Naturally, all buying is at an end. At the same time, prices are very firm, and it is believed the resumption of work will see a marked rise in prices. Such small business as is in progress at Cleveland is on the basis of 50s 3d ($12.30) for prompt sales, 50s 6d ($12.36) a month, and three months 51s ($12.48). There were no quotations on the Birmingham market on Thursday. Prices for northeast hematite are maintained, being 66s ($16.16) for early delivery.

**Finished Iron.**—With regard to the finished trade, it would almost be correct to say that there is no trade, the industry having been practically wiped out. The iron and steel works from one end of the Black country to the other are at a standstill, and this is especially provoking with all the order books full of orders for months ahead. There is much vexation in Sheffield because it is feared that a good deal of business which has been won from American and German competitors may go back to them. In the general steel departments, many orders are being withheld, while others have been cancelled. The railway companies are urgently needing the tires, axles and springs for which they have placed orders. It is feared that for high-speed steel and best tools, a large number of orders have been permanently lost. In Sheffield, in addition to extensive stoppage, business is being impeded by the drastic action of the railway companies in declining to handle any kind of material or goods which are not perishable. In some cases, where works have been able to lay in sufficient fuel, the refusal of the companies to deal with the output has compelled a stoppage. In the tin plate department of Swansea a large number of works have closed down.

It is remarkable that the strike has apparently brought no material addition to foreign iron and steel imports

into Great Britain. This is mainly due to the high freights prevailing; but a material factor is the very large continental demand, so that Belgium and Germany have very little iron and steel to spare. At the Birmingham iron exchange on Thursday, the only interest shown was on the part of a few consumers who are still wanting material under unfinished contracts. But in these cases, makers could, of course, give no promise or undertaking, except that orders would be executed "after the strike".

The greatest concern is felt in the Black country district where the flooding of the mines is threatened. The men were repeatedly warned that unless the pumps employed by the South Staffordshire Mines Drainage Commission were kept going, the mines would be permanently flooded, and many of them would be closed forever. The warning has been disregarded, and in some cases where workmen attempted to descend the pits to get the necessary coal for the pumps, they were forcibly prevented. If coal supplies are interfered with, the Black country, which is already severely handicapped by its central position, will have the cost of production increased by the bringing of coal over fairly long distances to work the local furnaces.

# ST. LOUIS

## Decided Upward Tendency in Scrap

Office of THE IRON TRADE REVIEW,
St. Louis, March 19.

**Pig Iron.**—Besides quite a number of scattering requests for prices on pig iron, specific inquiries are in the market for 1,000 tons of southern No. 3 and 500 tons of northern No. 2, for delivery over the second quarter, and for 300 tons of southern No. 2, for immediate delivery. Prices are rather stiff at $10.50, for No. 2, Birmingham basis, although it is admitted that iron might be bought at $10.25. Among the scattering sales reported the latter part of last week, were 200 tons of car wheel iron, 100 tons of northern No. 2, and 150 tons of southern No. 4. We quote for southern iron delivered, to which the Birmingham freight of $3.75 has been added, as follows:

| | |
|---|---|
| Southern No. 1 | $14.50 to 14.75 |
| Southern No. 2 | 14.00 to 14.25 |
| Southern No. 3 | 13.50 to 13.75 |
| Southern No. 4 | 13.25 to 13.50 |

**Coke.**—The strike of the coal miners threatened for April 1, a car shortage and the upward tendency of the pig iron and scrap iron market, have stiffened coke prices considerably. The demand also has improved, and local sales agents are inclined to believe that a still further advance will come. Inquiry has been good for small shipments, although no large business has been placed. Our quotations remain as follows:

We quote 72-hour Connellsville foundry grades, $2.50 to $2.65 for second quarter of 1912; 72-hour foundry, $2.25 to $2.50 on tracks and $2.75 to $2.85 for immediate delivery; 48-hour Connellsville furnace, $2 to $2.25; best 72-hour Virginia foundry, $2.50 to $2.75; 48-hour Virginia furnace, $2 to $2.25. The freight to East St. Louis and St. Louis is $2.80, and $2.70 from the Virginia fields when shipment is destined beyond St. Louis.

**Finished Material.**—Structural material for buildings, bridges and viaducts is in much better demand than it has been for quite a while, but prices remain poor. At least two large hotels and one office building are talked of for St. Louis, but plans have not advanced beyond the paper stage.

**Old Material.** — Nearly all scrap items have advanced 50 cents a ton in the St. Louis market, and there seems to be a decided upward tendency. No sales of importance are reported. The better tone of the market is attributed to the fact that the steel companies are coming in for considerable melting scrap. Our quotations remain as follows:

*Gross Tons*

| | |
|---|---|
| Old car wheels | $13.00 to 13.50 |
| Old iron rails | 14.50 to 15.00 |
| Re-rolling rails (5 ft. and over) | 12.50 to 13.00 |
| Old steel rails (3 ft. and under) | 11.75 to 12.75 |
| Light section relayers (45 lb. and under) subject to inspec. | 21.00 to 22.00 |
| Re-laying rails, subject to inspec. | 22.00 to 22.50 |
| Frogs, switches and guards | 10.00 to 10.50 |
| Heavy melting steel | 11.00 to 11.50 |
| Shoveling steel | 10.25 to 10.75 |

*Net Tons*

| | |
|---|---|
| No. 1 railroad wrought | $11.00 to 11.50 |
| No. 2 railroad wrought | 10.00 to 10.50 |
| Arch bars and transoms | 13.50 to 14.00 |
| Knuckles, couplers and springs | 10.00 to 10.50 |
| Shafting | 13.50 to 14.00 |
| Iron car axles | 18.00 to 18.50 |
| Steel car axles | 15.50 to 16.00 |
| Locomotive tires | 11.00 to 11.50 |
| No. 1 country wrought | 8.75 to 9.25 |
| Pipe and flues | 8.00 to 8.50 |
| Tank iron and cut boilers | 7.00 to 7.50 |
| No. 1 cut busheling | 8.75 to 9.25 |
| No. 2 cut busheling | 6.25 to 6.75 |
| Cast and mixed borings | 5.75 to 6.25 |
| Machine shop turnings | 6.50 to 6.75 |
| Railroad malleable | 10.00 to 10.50 |
| Agricultural, malleable | 9.00 to 9.50 |
| Stove plates | 9.00 to 9.50 |
| Angle splice bars (iron) | 11.00 to 11.50 |
| Angle splice bars (steel) | 9.00 to 9.50 |

**Puddling Plant Resumes.**—After an idleness of several months, the puddling department of the Geo. B. Lessig Co., Pottstown, Pa., has partially resumed and has sufficient orders on hand to insure its continued operations through the summer.

The Burr Foundry Co., Urbana, Ill., is planning the erection of a power plant and pattern shop. The estimated cost is $40,000.

# SEATTLE

## Orient Will Buy More American Steel

Office of THE IRON TRADE REVIEW,
Seattle, March 15.

With the opening of real spring weather and the increased construction throughout the Pacific Northwest, trade conditions have quickened materially. A feature of the export trade has been the increase in demands for American steel from the orient. The heavy shipments of shipbuilding steel which are consigned to Japanese ports have increased rather than diminished. Much of the steel which had passed through here is rails, bars and plates, but within the past week there has been no little structural material.

That the imperial railroads of Japan intend to make even greater improvements than have been indicated in the past three months is vouched for by the statement of B. Shimoda, superintendent of the western division of the imperial railways. Mr. Shimoda arrived here this week on his way to Cleveland and Pittsburgh, where he will investigate American-made material and place orders for the Japanese government.

Mr. Shimoda says the steel mill established by the government at Kushu, Japan, is working continuously but its capacity is insufficient to meet with the increasing demand for material of a high grade. Most of the steel purchased by the government will be in the United States. In addition to establishing the standard gage on all Japanese lines, the government expects

to standardize the Manchurian railroads with American rails.

**Pig Iron.** — Demands for finished material have been accompanied by a much more rapid movement in pig iron. Imported irons are declining to meet the cut in the American product on the Pacific coast. Several large shipments have been received within the past two weeks at the different ports along the coast, the largest receipts being in San Francisco. Seattle and Tacoma also are much more liberal purchasers than at any time during the past three months.

Alabama and Tennessee iron is more in evidence, although there is plenty of high grade English and Scotch iron still on the market. Several of the big importing companies, however, have cabled cancellations for shipments which have not left the United Kingdom. Coke carriers continue to bring in no little amount of pig iron for ballast.

We quote:

| | Prompt. | Second Quarter, 1912. |
|---|---|---|
| No. 1 Glengarnock | $22.50 to 24.00 | 24.00 |
| No. 1 Eglinton | 22.50 to 24.00 | 24.00 |
| No. 1 English Jarrow | 21.00 to 22.50 | 22.50 |
| No. 1 Cleveland | 20.00 to 22.50 | 22.50 |
| English Doncaster | 20.00 to 22.50 | 22.50 |

**Coke.** — Although there has been a slightly increased demand for coke, the domestic market still holds steady without showing additional strength. Several large consignments of imported coke of high grade have kept the cheaper qualities from advancing and the light ash products have the better call.

**Old Material.** — The movement of old material has been brisker than in months, many piles long held by dealers moving to meet an increased demand at slightly lowering prices for scrap, but with a slight increase for the better grade of steel. We quote:

| | |
|---|---|
| Iron rails | $14.00 to 15.00 |
| Rerolling steel | 15.00 to 16.50 |
| Old axles | 19.50 to 20.00 |
| Car wheels | 12.25 to 13.00 |
| Smelting, scrap | 10.00 to 12.00 |

# BIRMINGHAM

## Pig Iron for Export—Coal and Coke Activity

Office of THE IRON TRADE REVIEW,
Birmingham, Ala., March 19.

**Pig Iron.**—A schedule of $10.50 per ton, Birmingham, for No. 2 foundry was fully maintained in the transactions recorded during the past week. The tonnage sold consisted of several lots of 750 to 1,000 tons each; an aggregate of 2,500 to 3,000 tons in carload lots, and one or more lots for export, the exact tonnage of which is not definitely known. An estimate made from last reports fixes the aggregate tonnage sold in the week at 13,000 to 15,000 tons. With the exception of one lot of 1,000 tons, the delivery of which extends into the third quarter, all of the tonnage recently sold is for shipment prior to July 1. No price has been arrived at for shipments in the last quarter.

Considerable tonnage for export is pending, negotiations for some 15,000 to 20,000 tons understood to be actually under way. It is hardly thought that in view of all conditions existing, the producing interests would be willing to shade a $10.50 basis, even for the large tonnage mentioned; and some tonnage for export was sold at that price within the week. The stock accumulation will probably be reduced to a greater extent this month than during the month of February, by reason of specifications now in hand. The output will be larger in the last half of this month, and plans are under consideration for improvements and repairs to an idle plant with a view toward blowing in one additional stack. No announcement has been made as to the blowing in of stacks now in repair, other than by the Tennessee company, which concern has just blown in one furnace on foundry iron at Bessemer, Ala. In view of all conditions existing, the market is considered very much stronger, with the schedule of prices below a fair representative of values. We quote per gross ton, f. o. b. cars at Birmingham furnaces, viz.:

| | |
|---|---|
| No. 1 foundry | $10.75 to 11.25 |
| No. 2 foundry | 10.25 to 10.75 |
| No. 3 foundry | 9.75 to 10.25 |
| No. 4 foundry | 9.25 to 9.75 |
| Gray forge | 9.50 to 9.75 |
| Mottled | 9.25 to 9.50 |
| Standard basic | 10.25 to 10.75 |
| Off basic | 10.00 to 10.50 |
| Standard charcoal | 22.50 to 23.00 |

**These prices are per gross ton f. o. b. cars at Birmingham district furnaces.**

**Coal.**—There is a much larger demand for spot deliveries, owing to the heavy call at gulf ports for bunkerage, and prices have been affected accordingly. Contract prices are about at the same level as for some weeks past, but deliveries are being made with difficulty owing to the scarcity of equipment.

**Coke.**—A stronger demand for heating coke will probably result from the labor troubles in the anthracite fields. Shipments of foundry coke are being made at a satisfactory rate, and the price for spot deliveries of that grade are stronger, owing to the strong demand for coal. Standard Alabama 72-hour foundry coke is quoted at $3.25 to $3.50 per net ton at ovens.

# METAL MARKETS

## New York

March 19.

**Lead.**—The American Smelting & Refining Co. is still the lowest bidder for business at 4c, in New York, but there is evidence that such quotations are not intended solely to excite a large tonnage of orders. Business has been done in the west at the equivalent of 4.20c in New York by other sellers, and the latter is considered nearer the actual market for round amounts of lead than the 4c level.

**Spelter.**—The situation is unchanged. Spot spelter is practically unobtainable, except under special arrangements. There is a fair demand for future metal at higher prices, and some difficulty is noticeable in securing contracts this side of April. Spot and March are nominally 7.10c and 7c, respectively, and April is 6.90c, in New York.

## St. Louis

March 18.

**Lead and Zinc.**—The top price realized for zinc blende in the Missouri-Kansas-Oklahoma district last week was $58 a ton, while 60 per cent grades brought a base price of $54. Lower grades sold at $55 basis. Sales were less than for the previous week, which reached the highest mark since 1905. Operators have placed double and treble shifts in their mines, and the output last week showed considerable increase. Calamine was strong at $26 to $28 a ton for 40 per cent grades, with choice lots bringing $33 a ton. Lead ore was dull at $50 to $54 a ton.

## Chicago

March 18.

We quote dealers' selling prices, f. o. b. Chicago, on new metals, as follows:

Lake copper, carload lots, 15c; casting, 14½c; smaller lots, ¼c to ¾c higher. Spelter, car lots, 6.85c; lead, desilverized, 4.05c in 50-ton lots; corroding, 25c per 100 pounds higher; sheet zinc, $8.50 list, f. o. b. La Salle, in car lots of 600-pound casks; pig tin, 43c. Cookson's antimony, 8½c; other grades, 7½c to 8c.

# Annual Report of the U. S. Steel Corporation

*Earnings and Surplus Show Heavy Declines—Surprising Increases in Export Business—Complete Financial and Output Summaries*

The tenth annual report of the United States Steel Corporation and subsidiary companies for the fiscal period ending Jan. 31, 1911, was made public in New York, Tuesday. The total earnings, after deducting operating expenses including ordinary repairs, employes bonus plan and interest on bonds of subsidiary companies, amounted to $104,305,465.87. Allowance for depreciation and extraordinary replacements, etc., was $18,229,059.76, and for subsidiary company sinking funds, $1,610,038.99, making a total allowance of $19,839,098.75. Making these deductions leaves the net earnings for the year $84,466,367.12.

The total interest deducted on United States Steel Corporation bonds was $29,247,850, adjustments of sundry credits are $81,779.66, making a balance of $55,300,296.78.

Dividends on Corporation 7 per cent preferred stock, $25,219,677, and on 5 per cent common stock, $25,415,125, make the total dividends paid out $50,634,802. This leaves the surplus net income for the year $4,665,494.78.

### *The Surplus Decreased*

The total earnings show a decrease in comparison with 1910, of $36,749,288.64; the depreciation account showed a decrease of $3,911,495.77; and the net earnings for the year showed a decrease of $32,271,790.68. The surplus net income for the year showed a decrease of $32,106,888.04, while the balance of surplus for the year decreased $6,106,888.04. The expenditure on ordinary maintenance decreased 7.2 per cent, and extraordinary replacements decreased 16.6 per cent. During the year, sinking fund trustees redeemed the total of $7,751,000, in bonds.

The total inventory valuations of subsidiary companies as to Dec. 31, 1911, were $176,067,189, compared with $176,537,824 on Dec. 31, 1910. Included in these valuations were the following, representing profits of subsidiary companies on inter-company sales of material, etc.: In 1911, $22,583,600, and in 1910, $33,704,439.

The total ore mined in the Lake Superior region was 18,694,068 tons, compared with 23,264,515 tons in 1910. In the Tennessee company's mines in 1911, a total of 1,239,563 tons was won, making the total for the year, both north and south, of 19,933,631 tons, compared with 25,245,816 tons in 1910. Of coke, 12,120,212 tons were made in 1911, compared with 13,649,578 tons in 1910. The total pig iron production in 1911 was 10,744,897 tons, compared with 11,831,398 tons in 1910, a decrease of 9.2 per cent. The steel ingot production in 1911 was 12,753,370 tons, of which 5,055,696 tons were Bessemer ingots and 7,697,674 tons were open-hearth ingots. This shows a decrease of 10.1 per cent and compares with the total production in 1910 of 14,179,369 tons, divided into Bessemer, 5,796,223 tons, and open-hearth, 8,383,146 tons. Rails, both heavy, light and girder, were produced in 1911 to the amount of 1,568,028 tons, compared with 2,118,473 tons in 1910; heavy structural shapes, 547,186 tons in 1911, and 656,797 tons in 1910; pipe and tubing, 863,670 tons in 1911, and 868,550 tons in 1910; wire and wire products, 1,613,754 tons in 1911, and 1,490,318 tons in 1910; sheets and tin plate, 1,079,046 tons in 1911, and 1,082,787 tons in 1910; spelter, 28,333 tons in 1911, and 26,777 tons in 1910; Universal cement, 7,737,500 barrels in 1911, and 7,001,500 barrels in 1910, an increase of 10.5 per cent.

### *Yearly Expenditures*

The expenditures by all companies in 1911 for acquiring additional properties and plant extensions, less credits for properties sold, aggregated $47,815,419.75. On ore stripping was expended $1,615,441.37. The total expended by all companies on manufacturing properties, excluding the Gary additions, was $15,147,588.93; on coal and coke properties, excluding the Monongahela coal purchase, $1,194,957.44; on all iron ore properties, $1,220,437.26; by all transportation companies, $4,472,583.86, of which the railroad companies expended $1,494,473.02 on cars, locomotives, etc., and the Pittsburgh Steamship Co. $592,554.25 on additional steamships; on miscellaneous properties, $132,758.01.

The volume of busines done by all companies in the year, represented by combining gross sales and earnings, equals $615,148,839.79, as compared with $703,961,424.41 in 1910. The average number of employes in 1911 was 196,888, compared with 218,435 in 1910. To these wages and salaries were paid to the amount of $161,419,031 in 1911, and $174,955,139 in 1910. Stock subscriptions were received in the year from 36,946 employes, for the aggregate of 30,619 shares of preferred and 30,735 shares of common stock, the preferred price being fixed at $110 and the common stock at $65.

### *Extraordinary Exports*

The Corporation exported all kinds of material except cement in the year, a total of 1,746,492 tons, an increase of 522,996 tons, or 42.7 per cent over 1910. Of the total exports, 1,719,272 tons were finished steel products, an increase of 41.4 per cent over 1910; on pig iron and scrap, 26,728 tons, an increase of 283.3 per cent over 1910; on cement, 110,364 barrels in 1911, none being exported in 1910.

The report contains this statement: "The output of finished products for sale was only about 67 per cent of the full normal productive capacity of the plants. The decrease in output was most marked in those classes of material used largely by railways, viz.: rails, track fittings and steel car building material. The decrease in business done as represented by total tonnage output of finished steel production was 11.7 per cent in comparison with 1910. In the domestic trade the decrease was, however, considerably greater, namely 18.6 per cent, while in the export business there was an increase of 41.4 per cent."

"The material slackening in the domestic demand for the products of the subsidiary companies, which became apparent in the fall of 1910, continued in a marked degree during the early part of 1911 and to a greater or less extent during the closing weeks of that year. In November, 1911, a substantial buying movement developed, subsidiary companies' unfilled orders on hand rising to a total of 5,084,761 tons at Dec. 31, 1911. This improvement in business has been maintained fairly well since the first of the year and to the date of writing this report. At Feb. 29, 1912, the unfilled order tonnage equalled 5,454,200 tons. In May, 1911, a sharp break occurred in selling prices of nearly all steel products and prices continued to gradually decline, reaching in the latter part of the year the lowest figures, in respect to most of the commodities, which have been realized since 1898."

## ESTIMATING SCHOOL

**May be Established by Foundrymen —Address of A. O. Backert.**

"Estimating the Selling Price of Castings" was the subject of an address delivered by A. O. Backert, editor of The Foundry, before the Chicago Foundrymen's Club at the monthly meeting of this society, held at the Great Northern hotel, Saturday evening, March 16. Attention was directed to the adoption of an intelligent system of estimating, particularly in jobbing shops, where a varied line of work is made. The following formula was recommended for use in making estimates, which includes all of the factors entering into the cost of making castings: W + L + O + C + P equals the selling price. The cost of the metal in the casting is represented by W, which is the weight of the casting multiplied by the cost of the metal in the ladle; L represents all direct labor, including molding and coremaking; O represents the overhead charges and in many instances it will be found to greatly exceed the cost of the direct labor; C represents contingencies and is a factor which always should be carefully considered when making estimates on castings. This should include possible casting losses, special rigging, etc. The profit is represented by P.

The establishment of an estimating school was recommended for the purpose of training the foundrymen, superintendents, foremen and other foundry employes to make estimates intelligently and to eliminate, as far as possible, the large amount of guesswork which is one of the evils of the jobbing foundry industry.

---

**Elected Officers.**—The Foremen's and Superintendents' Club, of Oakley; a machine tool manufacturing suburb of Cincinnati, held its annual meeting recently and installed the following officers: President, G. W. Calhoun; first vice president, W. W. Ramp; second vice president, Wm. Eggelrucht; treasurer, S. E. Weier; secretary, H. M. Roberts; recording secretary, Chas. Mean. Illustrated lectures were given on various makes of machine tools, and Dr. W. S. Yeager addressed the club on "Wounds and Infection", and gave instructions on how to apply first aid to the injured.

---

**New General Manager.** — George W. Hannan, formerly manager of the Pope Tin Plate Company's mills at Steubenville, has been made general manager of the plants of the Phillips Sheet & Tin Plate Co., a position created by the merging of the Phillips Sheet & Tin Plate Co. and the Pope Tin Plate Co. Mr. Hannan was formerly identified with the Pope Tin Plate Co., and was one of the originators of that company. He is well known in the sheet and tin plate trade. His headquarters will be at Weirton, W. Va.

## HIGHER PRICES

**For Bessemer and Basic.—Foundry Firm at $13.25, Valley.**

Pittsburgh, March 20. (By wire.)—Valley furnaces are asking $14.50 for Bessemer iron and $14.25 is the lowest price quoted this week. Basic is showing an advancing tendency and third quarter iron is being quoted at $13.50, while iron for prompt shipment is sold for $13.25. No. 2 foundry iron sales in lots of 1,500 and 2,500 tons are made at $13.25, valley, and furnaces are not quoting below that figure. There is evidence of much buying of foundry for third quarter. Spot foundry coke is firm at $3.

Bessemer open-hearth rolling billets are $20, strong, and sheet bars are $21. It is not believed that any sales below that price are possible. Considerable business for export is being booked this week.

---

**Officers Elected.** — At a meeting of the directors of the Laconia Car Co., Boston, Cornell S. Hawley, formerly president and treasurer of the Consolidated Car Heating Co., was elected president and Craig Colgate, Wm. L. Putnam, Harold J. Coolidge and Robert Treat Paine 2nd were added to the board.

---

**Tool Builders' Convention.**—The convention of the National Machine Tool Builders' Association will be held at Atlantic City on Thursday and Friday, May 16 and 17, at Hotel Chalfonte.

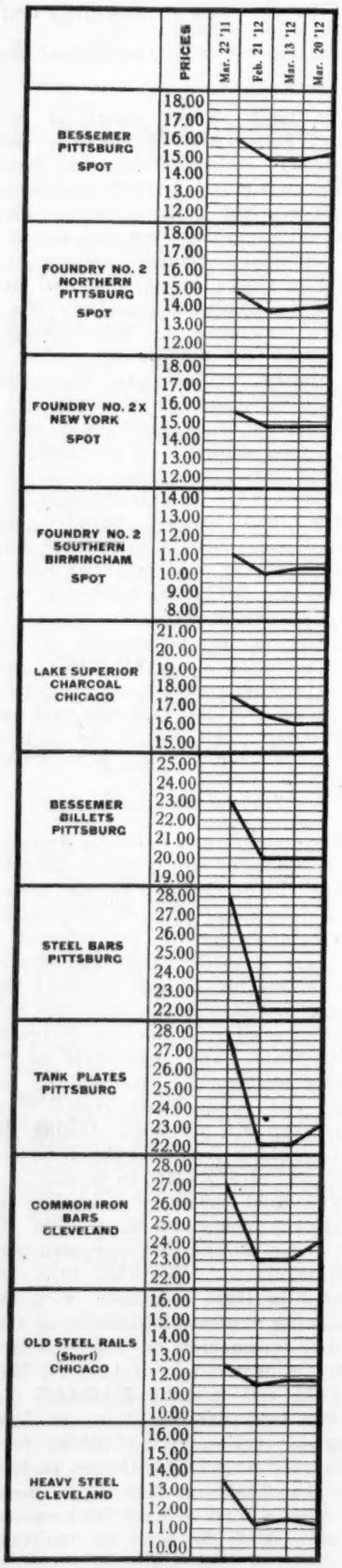
---

**Catalogs Wanted.**—William Wright, consulting engineer, The Pullman Co., Arcade building, West Pullman, Chicago, would like to receive catalogs of all kinds of devices designed to promote efficiency in the organization and operation of large shops.

---

The Crucible Steel Co. of America has declared the usual quarterly dividend of 1¾ per cent on its preferred stock, payable March 30.

## PRICE CHART



# The Commonwealth Steel Co.'s Improvements

*Description of the Machine Shop, Store Room and Club House—Welfare Work and School for Employes*

Ten years ago the plant of the Commonwealth Steel Co., was built at Granite City, Ill., and the first steel was made Sept. 8, 1902. In September, 1904, control of the company was purchased by Clarence H. Howard, who made extensive plant improvements for the manufacture of a special line of railway devices. The product now consists exclusively of steel castings made by the basic open-hearth process, including platforms and trucks for passenger, mail and baggage cars, tender underframes, pilot and tender beams, locomotive driving wheel centers, transom draft gears, etc.

It has been the company's constant aim under the direction of Mr. Howard to impress all superintendents, foremen and employes that the only possible success for the organization is on a basis of efficiency and quality of output. On account of the large tonnage of special castings manufactured for passenger cars and locomotives, the company recognizes its unusual and heavy responsibility for the safety of life and property; therefore, no effort has been spared to make a high grade product. The highest *esprit de corps* is aimed at in the organization and much more effort than usual has been made along this line. What the company calls its Fellowship Work has this object in view, some of the details of which will be discussed later in this article. The management insists on strict justice and fair dealing between the company and its employes and between the employes themselves, believing that this principle is essential to the highest success.

### *Recent Improvements*

Recently some interesting improvements have been made at the Granite City plant; a new machine shop, blacksmith shop and storehouse have been built and a club house constructed for the benefit of the employes. The machine shop building is two stories in height and includes considerable office space, locker rooms, a new chemical laboratory and an electrical shop. It is the purpose of this article to discuss the methods and design of the shops and storehouse and to give a brief description of the club house and welfare work of the company.

The new departments are situated between the main foundry building and the works office, the machine shop and storehouse communicating directly with the north end of the foundry. The general arrangement is shown in Fig. 11. The buildings are reinforced concrete, and the second floor of the machine shop is supported by heavy concrete posts approximately 2 feet square.

The machine shop is used exclusively for repair purposes and, therefore, operates as a jobbing shop rather than a manufacturing establishment. The building is 122 feet, 11 inches in length and 81 feet wide. The second floor is devoted to office, laboratory and other purposes and practically all of the machine tools are confined to the first floor. A plan of the second floor is shown in Fig. 12. This illustration indicates the open court, 59 feet long and 28 feet wide, which greatly improves the illumination of the floor below.

The arrangement of the various machine tools is shown in Fig. 11. It will be noted that the equipment of the machine shop includes five lathes with swings varying from 12 inches to 54 inches, two 48-inch radial drills, three upright drill presses, a 20-inch crank shaper and a 30-inch rack shaper, a 36-inch planer and a 40-inch hobbing machine of foreign manufacture. The usual equipment of tool grinders, bolt cutters, hack saws, pipe threaders, etc., is installed.

Considerable study was made in working out the drive for these various tools and it was concluded that the most satisfactory method would be to drive the larger machines with individual motors and the smaller ones in small groups connected to line shafts. One of the line shaft groups includes seven machines and the other four. Included among the tools which it was deemed best to drive by shafts and belting are the shapers, radial drills, upright drill presses and the 12-inch engine lathe, together with the tool grinders. The 36-inch planer, which has a 12-foot bed, is driven by a 10-horsepower

FIG. 1—MAIN AISLE IN THE COMMONWEALTH STEEL CO.'S MACHINE SHOP

FIG. 2—WEST AISLE IN THE MACHINE SHOP, SHOWING BENCH WORK ON METAL PATTERNS

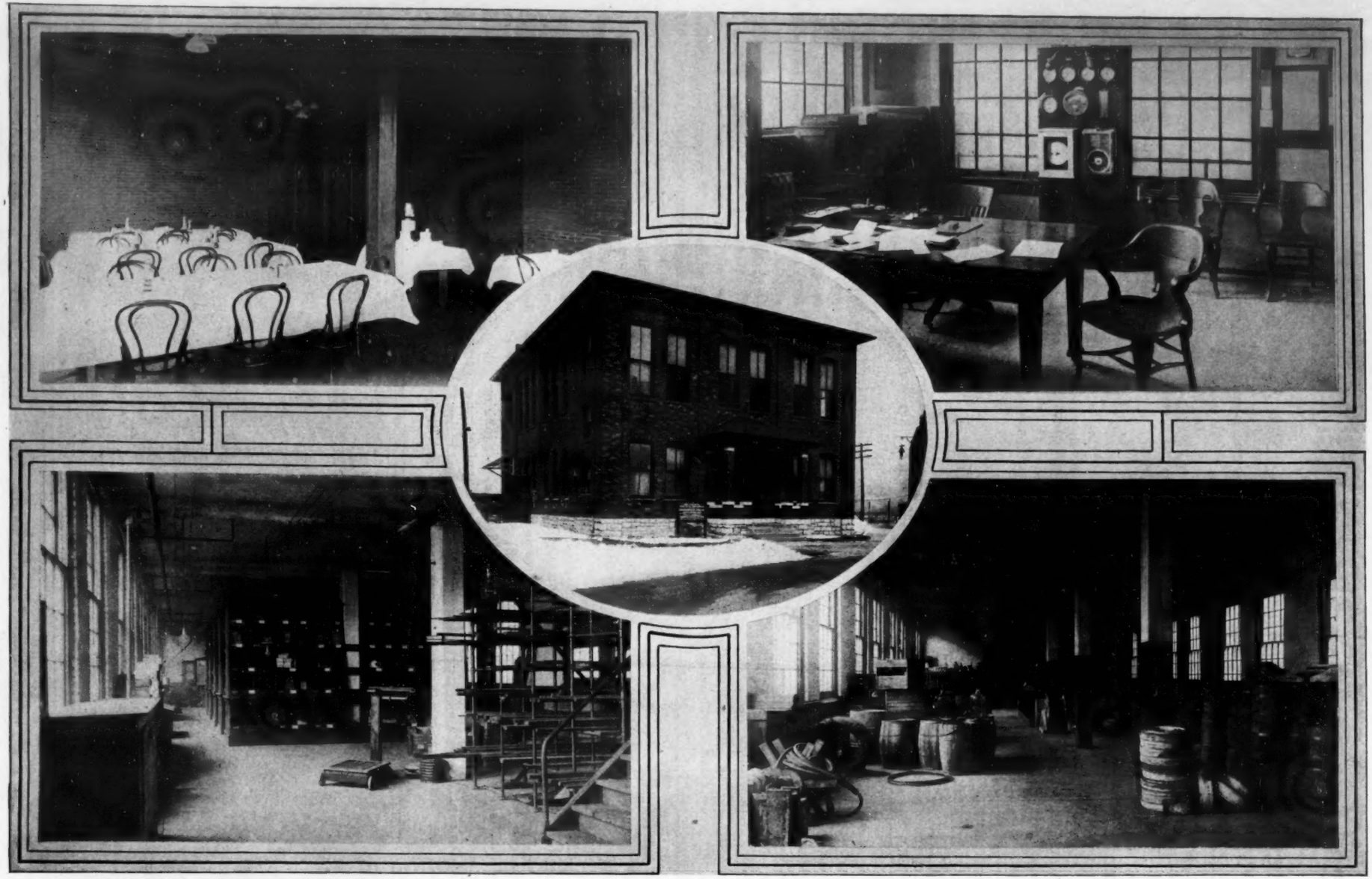


FIG. 3—DINING ROOM IN THE CLUB HOUSE

FIG. 4—GENERAL SUPERINTENDENT'S OFFICE

FIG. 5—THE COMMONWEALTH FELLOWSHIP CLUB

FIG. 6—FIRST FLOOR OF THE STOREHOUSE

FIG. 7—SECOND FLOOR OF THE STOREHOUSE

motor and the hobbing machine is direct-connected to a 5-horsepower motor. The 32 and 54-inch McCabe double spindle lathe is geared to a 10-horsepower motor and a motor of a similar size is connected to a 32-inch Schumacher lathe. Five-horsepower motors drive the 24-inch engine lathe and the 18-inch Whitcomb lathe. The larger of the two shaft-driven groups is belted to a 15-horsepower motor and the smaller group is connected to a 10-horsepower motor. It is found that these motors are operated well up to capacity and, therefore, with good efficiency. All of the motors are of the direct current type, designed to operate on 220-volt circuits.

The tool room, which is 18 x 20 feet, is placed conveniently in the center of the shop, as shown in Fig. 11. The shelves and walls are of steel, and the top, which is open to admit light, is protected by wire netting. Lavatories are situated at two corners of the shop and it is, therefore, not necessary for the men to leave the room for any purpose, thus preventing considerable waste of time. The main bay of the machine shop is served by a 4-ton crane, having a span of 20 feet. This crane reaches all of the heavy tools. The west bay is served by a similar crane. This portion of the shop is set aside for work on metal patterns and molding machines and the finishing work on metal core boxes. The Commonwealth Steel Co. has found it economical to use aluminum core boxes in a great many cases, which are much more durable and consequently more economical than wooden boxes. The shop is lighted by arc lamps spaced 35 feet apart in rows, the distance between the rows being 45 feet. The lamps are hung approximately 12 feet from the floor. Numerous incandescent lamps also are used for auxiliary lighting.

*Electrical Shop*

The electrical shop, equipped for the repair of motors, arc lamps and other electrical apparatus, is located on the second floor, occupying a room 60 feet long and 39 feet wide, as indicated in Fig. 12. An overhead mono-rail trolley with an electric hoist extends completely around the room, passing over the open well which connects with the floor below. By the use of this trolley it is an easy matter to lift heavy machinery from the main floor and carry it to any point in the electrical shop which may be desired. A 30-inch lathe for turning and banding armatures and a high speed sensitive drill are a part of the electrical shop equipment. Adjacent to the electrical shop are four offices occupied by the shop administration force, including the general superintendent. Three large windows in the office of the latter look directly out upon the main foundry floor. Across the court from these offices is the main laboratory.

Opposite the electrical shop are two large locker rooms and lavatories; one, 22 x 31 feet, is set aside for the use of cranemen and electricians and the other, which is the same size, is occupied by the foreman. These rooms are well equipped with individual steel lockers and extensive lavatory facilities, including hot and cold water and shower baths. In the main portion of the shop similar facilities are provided for the men and the company has devoted more than the usual attention to these details. Immediately adjacent to the locker rooms is an office record room, 15 x 31 feet.

On account of the irregular nature of the work done in the machine shop, it has not been desirable to install any elaborate system for keeping costs or recording the output of each man. Each machinist fills out a time-slip, Fig. 8, which contains the details of his day's work. These slips, together with the material slips are forwarded to the cost department and form a basis for determining the cost of individual repair jobs. When a new repair job comes into the shop, the foreman is generally required to make an estimate of the cost involved and the figures arrived at by the cost-keeping department from the time and material slips form a check against the foreman's estimate and also furnish him data upon which to base future estimates covering similar work. An interesting form, Fig.

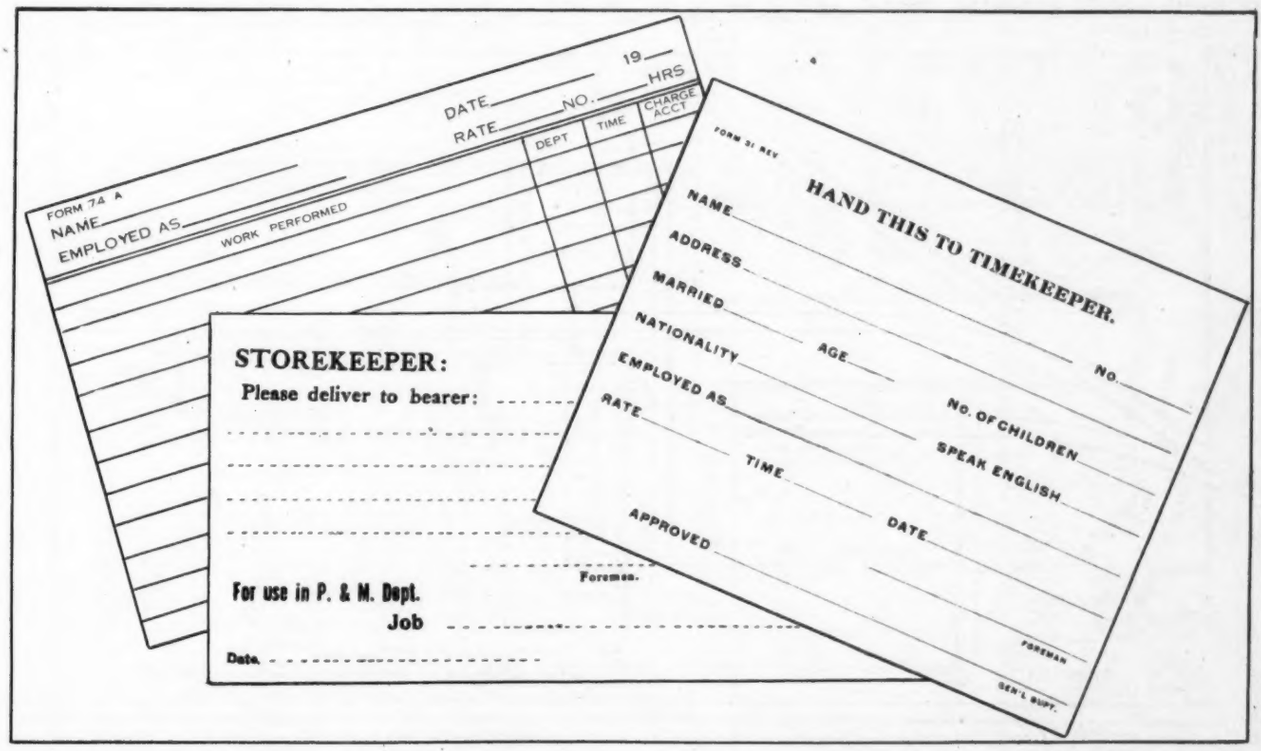



FIG. 8—MACHINIST'S REPORT OF WORK DONE
FIG. 9—ORDER FOR MATERIAL FROM STORE
FIG. 10—EMPLOYMENT SLIP

10, called an employment slip, has been devised for the purpose of collecting essential data regarding each new employe. This slip contains spaces for the name, number and address of the workman; it also gives his nationality, age, knowledge of English, marital condition and the number of children, if any, dependent upon him, together with the rate of pay and kind of work for which he was hired. This slip, which is signed by the foreman and approved by the general superintendent, is handed by the man to the timekeeper on his first round and forms the timekeeper's authority for putting his name on the pay roll.

The general stores are kept in a two-story building, 122 feet 11 inches in length and 32 feet wide, situated east of and parallel to the machine shop. The first floor of the storehouse contains the storekeeper's office and is devoted to the storage of electrical goods, pipe fittings, bolts, foundry supplies, iron and steel, waste, etc.; the heavier reserve supplies are kept on the second floor. Communication between the first and second floors is afforded by a 1½-ton elevator located at the north end, as shown in Fig. 11. The small supplies are kept in numbered steel bins on the first floor, where they are instantly accessible. The arrangement of these bins is indicated in Fig. 11. Records of the amount of stock on hand are kept in a card index, there being a separate card for each different commodity. These cards give the number of the bin in which the material is stored and blank spaces for recording the amount of material received and delivered, forming an automatic and continuous record of the quantity of supplies on hand.

When any department head wishes material which is kept in stock in the store room, he fills out the form shown in Fig. 9, and this is the storekeeper's authority to deliver the quantity of material required. Requisitions for material which must be purchased are made on another form, requiring the approval of the general superintendent. Upon the receipt of this form, properly approved, the storekeeper makes out a requisition on the purchasing agent, which is in turn revised by both the general superintendent and the manager of the works and then forwarded to the purchasing department. When the material is ordered the purchasing agent sends a duplicate of the order to the store room and the quantities of material received are checked against the figures given on this duplicate order. When the material has been all received and checked, the order is stamped "Material Received" and "Invoice Passed" and the invoice which accompanies it is sent back to the general office for payment.

Eight kinds of oil are kept in stock in submerged tanks just outside of the building, the oil being delivered through self-measuring pumps as required.

The new blacksmith shop is located in a separate building, 63 x 52 feet in size, situated in front of the machine shop. It is an exceptionally high structure, which mitigates the smoke nuisance from the forges. There is nothing unusual in the shop equipment. It includes four open fires, one 350-pound and one 800-pound steam hammer, together with two oil-tempering furnaces and the necessary auxiliary equipment. Immediately adjacent to the blacksmith shop is a locomotive shop or roundhouse for taking care of the switching engines used about the works.

The arrangement of tracks serving these buildings is shown in Fig. 11. One spur passes over a platform scale and runs parallel to the west side of the blacksmith shop and machine shop; another extends between the

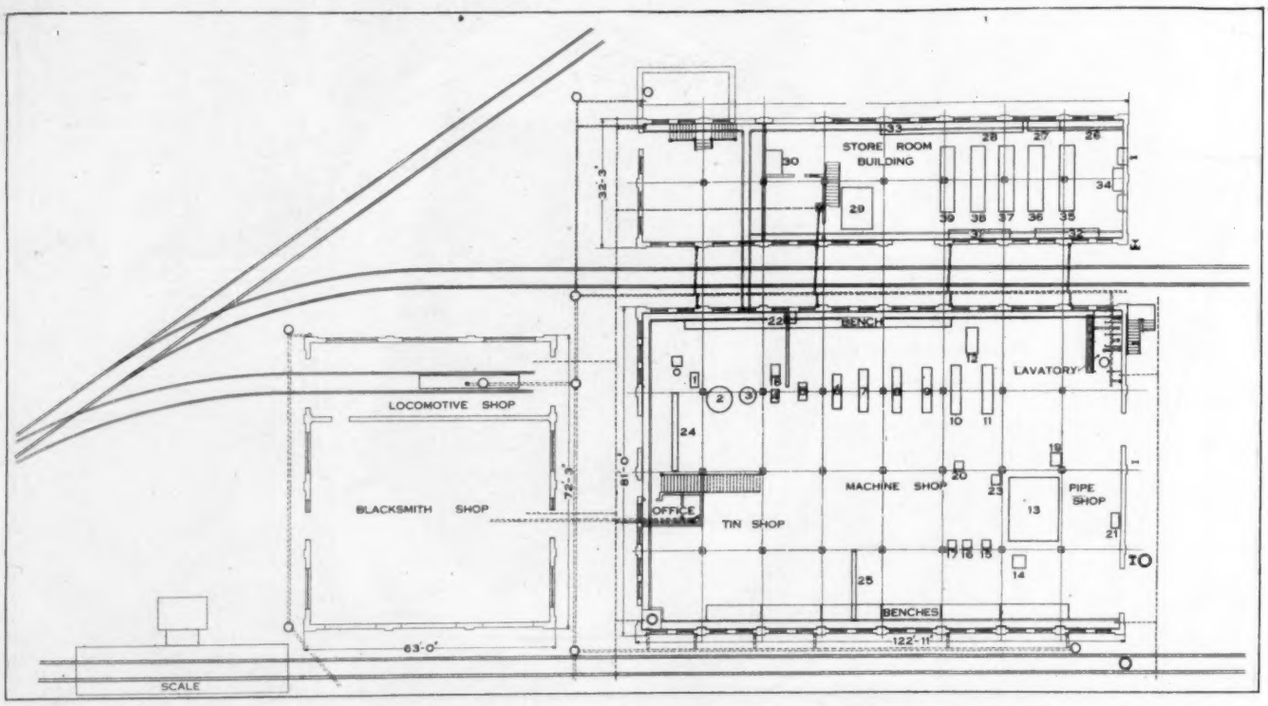



FIG. 11—GENERAL LAYOUT OF THE NEW MACHINE SHOP, STOREHOUSE AND BLACKSMITH SHOP

0—Sensitive drill; 1—Tool grinding machine; 2—48-inch American radial drill; 3—24-inch Cincinnati upright drill; 4—20-inch crank shaper; 5—30-inch rack shaper; 6—12-inch Bradford engine lathe; 7—18-inch Whitcomb engine lathe; 8—24-inch Schumacher engine lathe; 9—32-inch Schumacher engine lathe; 10—McCabe 32 and 54-inch double spindle lathe; 11—36-inch by 12-foot planer; 12—40-inch hobbing machine; 13—Tool room; 14—48-inch American radial drill; 15—20-inch upright drill; 16—Emery grinder; 17—Emery grinder; 18—20-inch Barnes upright drill; 19—Bolt cutter; 20—Hack saw; 21—Pipe threader; 22—15-horsepower motor, belted to line shaft; 23—10-horsepower motor, belted to line shaft; 24—4-ton traveling crane; 25—4-ton traveling crane; 26—Automatic oil pumps; 27—Shelf for miscellaneous stores; 28—Washers and waste; 29—Tool steel rack, 8 feet high; 30—1½-ton elevator; 31—Rack for 3-16-inch and ¼-inch round iron; 32—Rack for ⅜-inch round iron; 33—High speed drill locker; 34—Receiving and delivery windows; 35—Rack for foundry supplies; 36—Rack for drills, bolts, etc.; 37—Rack for rivets and pipe fittings; 38—Rack

machine shop and store room; both of these enter the foundry. The latter track may be used for the reception of carload shipments destined for the storehouse.

In addition to the foregoing, the company has recently completed a handsome club house for the convenience of its employes. The exterior of this building, which is a neat brick structure, is shown in Fig. 5. It cost with its equipment about $15,000. The club is known as the Commonwealth Fellowship Club and any employe of the Commonwealth Steel Co. is eligible to membership. At the present time there are about 70 active members. The general expenses are borne by the company and a fund for social and entertainment purposes is maintained by the assessment of dues from each member amounting to 25 cents a month.

The main floor of the club house contains lavatories, a library, a large lounging room furnished with a billiard table and a periodical table on which are kept the leading technical journals, and a cafe. On the second floor there is a commodious hall and stage, together with space for the school which is operated by the company. The foreman and various heads of departments obtain their lunches at the club's cafe and this convenience is furnished at its net cost, the expense of preparing and serving the food being borne by the company. The club is governed in the ordinary manner and has done a great deal to foster a spirit of fellowship among the members by giving lectures, plays, dances, etc. Also financial benefits are extended in cases of distress and a circulating library said to be the only one in Granite City is maintained.

*School for Employes*

In connection with its welfare work the company is now conducting a school for the benefit of its employes, principally the men in the shop. This school is in session four days a week from 4:30 until 6 p. m., and its advantages are offered free and without restriction to any employe of the company. On Wednesday and Friday there is a class in mechanical drawing, taught by one of the draftsmen, the aim of which is to familiarize the students with the practical use of drawings and to enable the workmen to read drawings with facility. On Tuesday and Thursday instruction is given in mathematics, penmanship, spelling and correct speech, it being found that these are the subjects most desired by the men. Since many of the employes are foreign-born, this school is of immense assistance in familiarizing them with the language and customs of this country. The school is not organized into classes, each pupil being treated according to his individual requirements and in this way the maximum educational efficiency is attained. The school is a great help to ambitious employes and many of them eagerly grasp the advantages which it offers.

The welfare work of the company is under the direction of Arthur T. Morey, assistant to the president. The improvements described in this article were designed and erected under the supervision of W. E. Hoblitzelle, works manager, and R. A. Bull, general superintendent.

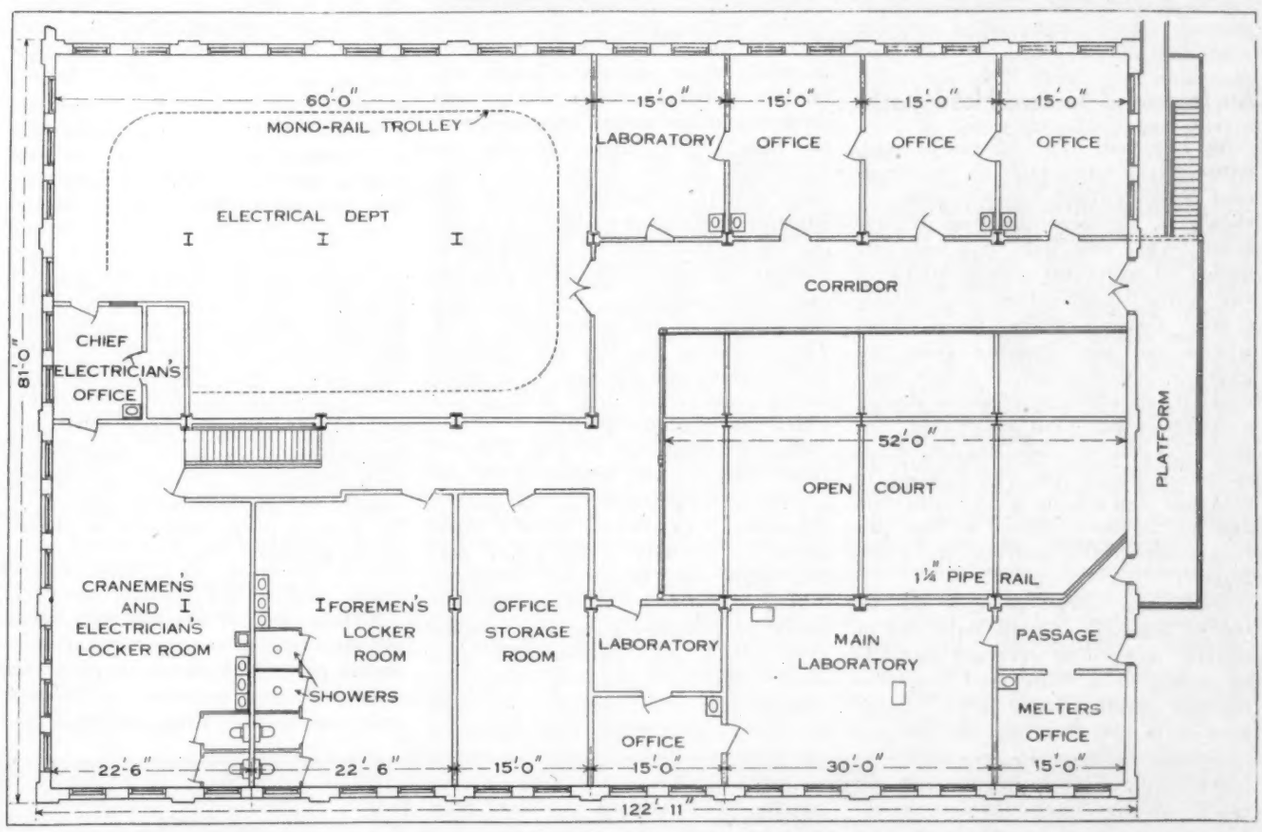



FIG. 12—PLAN OF SECOND FLOOR OF MACHINE SHOP BUILDING

## Pattern Makers On Strike

Upon the refusal of employers to grant their demands, pattern makers in the jobbing shops of Portland, Ore., have walked out with independent pattern makers. Employers have filled the places of the men, who made a demand for a minimum wage scale of 56 cents per hour with a maximum eight hour day. Previous to this latest demand they had asked for a minimum of $5 per day of eight hours. It is not thought that union pattern makers will make good a threat to start a jobbing shop of their own.

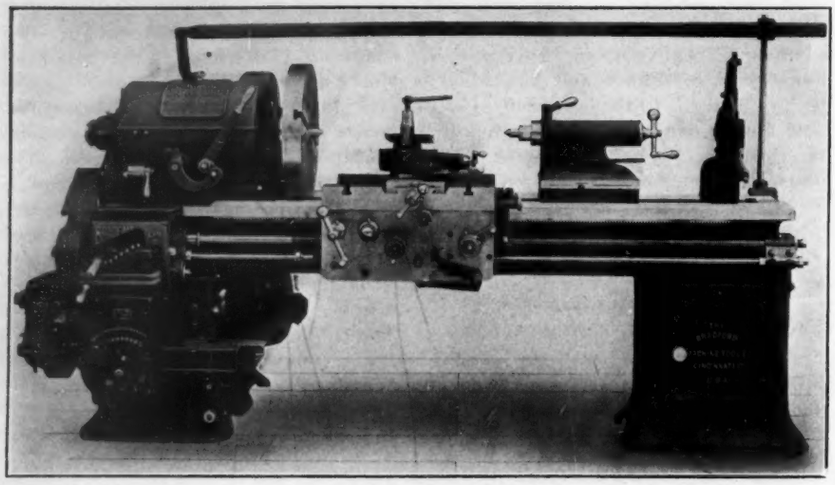


FIG. 1—IMPROVED, GEARED-HEAD, MOTOR-DRIVEN LATHE

## An Improved Geared-Head Lathe

An improved type of geared-head, motor-driven lathe, built by the Bradford Machine Tool Co., Cincinnati, is shown in the accompanying illustrations. This new lathe has been designed to avoid the complications of the usual combination of sleeves, shafts, segment gears, levers, hand wheels and slow running gears engaged by friction, all of which have necessitated a long head and a shorter geared-head has been substituted. The motor is placed near the floor, as shown in Fig. 2, the object being to eliminate top-heaviness and vibration and to conserve space, as this arrangement greatly shortens the headstock.

Mechanical speed changes are instantly available and the lathe can be started, stopped or reversed instantly by means of a shifter rod that runs the full length of the lathe. Incorporated in the drive for the purpose of changing speed more easily or quickly, is a selective automobile speed box, which provides four speeds. The motor runs in one direction only, as the reverse is mechanical. Eight spindle speeds, varying from 12 to 398 revolutions per minute, are obtainable if a constant speed motor is used, or, by using a 1 to 1½ variable speed motor, with a simple starting and regulating rheostat, an indefinite number of speeds can be obtained. The speed box lever is locked automatically when the lathe is running, thereby preventing breakage. The lower gear box shaft is continued to the left of the gear box, and is in driving connection by means of a pair of gears and a pair of silent chain wheels with a short countershaft driven direct by a pinion on the end of the motor shaft. Friction clutch members, to engage either the chain or gear drives, are furnished, and these are in operative connection with the long shifter handle, so that the lathe can be run forward or backward readily. They also provide an effective quick brake stop for working up to shoulders. A shot-bolt, in positive operative connection with the main clutch-operating lever, prevents the shifting of the gears under load. The operating handles are conveniently located and the peripheral speed of the gears is very low. All exposed gears are carefully guarded.

The head has for its first driver a short shaft carrying a chain and a gear wheel, both of which are in driving connection, respectively, with a chain wheel on one end of the upper gear box shaft, and a friction clutch-operated gear on the main spindle, the latter gear being in driving connection with a gear on the back gear shaft. This back gear shaft also carries another gear, which is in turn in driving connection back again to the lathe spindle by means of a second positive clutch-operated gear on the spindle. The lever on the head is in operative connection with friction and positive clutches, which respectively engage the high and low speed gears with the spindle. All supplementary speeds are procured through a regulating rheostat.

The quick change gear device is of the Bradford type, which gives an unlimited range of feeds, and all standard and pipe threads, including 11½, can be cut. The feed is 4½ times the threads, and an automatic stop for longitudinal feeds is provided regularly. The drive from the spindle to the lead-screw is direct. When not in use, the worm wheel on the chasing dial is swung out from the lead-screw to an inoperative position by means of a cam and knurled knob, avoiding extra wear on these parts. A thread indicator is attached to all lathes.

The spindle is made of high carbon crucible steel and is mounted in adjustable taper bronze bearings. It extends through the hood, and the thrust collars run in an oil bath. The bed is heavy, being webbed in two-foot sections and will not spring under the heaviest cuts. The compound rest is solidly gibbed throughout. The base is graduated in degrees, and the wearing surfaces are of ample width. The lead-screw is cut from a master screw and is not splined, as a feed rod is furnished that can be used for feed purposes, thereby saving the lead-screw and nut. The nut is of the split pattern, and is made of phosphor bronze. The feeds cover a wide range from very coarse to very fine, and an automatic stop to the feed is placed on all lathes. Each lathe has a friction cross-feed graduated to read in thousandths, a friction traverse feed in the apron and an automatic stop for the carriage.

---

The city of Cleveland will call for bids about April 15, for a large quantity of power plant equipment for the proposed municipal electric lighting plant. Specifications have not been completed but the requirements will include: Three 5,000-kilowatt turbo-generators; a boiler capacity of 7,200 horsepower; stokers, and 25,000 square feet of economizer surface. F. W. Ballard is the engineer in charge of the proposed plant.

---

Murray, Ky., which has sold bonds for the installation of a water system and is now ready to let contracts for same will also, according to reports, erect an electric light system.

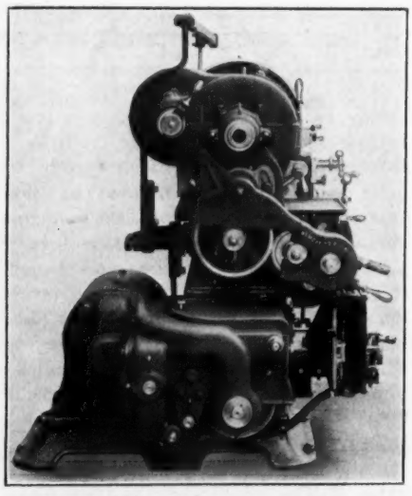


FIG. 2—END VIEW OF GEARED HEAD LATHE, SHOWING ARRANGEMENT OF MOTOR DRIVE

# Electric Power in Eastern Iron Ore Mines[1]

*A Discussion of the Substitution of Electric for Steam Power in the Operation of the Mining Properties of Witherbee, Sherman & Co.*

By John Liston

For more than a century the ore beds in the vicinity of Port Henry, N. Y., have yielded a high grade magnetite iron ore, the earliest recorded work having been performed in 1804 at the Cheever mine, situated about two miles north of Port Henry, while the Old Bed mine at Mineville, N. Y., which formed the nucleus of the properties now held by Witherbee, Sherman & Co., was first developed in 1824.

Work on a commercial scale was not undertaken, however, until the incorporation of the present company in 1849, at which time a systematic development of the ore beds at Mineville was inaugurated and steam power plants provided for the various workings.

Subsequent to the purchase of the Old Bed mine three other mines were acquired and transportation to shipping points provided for, and as the ore beds were of considerable extent and presented conditions favorable to economical mining, the volume of the output increased steadily until in 1910 it reached 750,000 tons, while the present capacity is in excess of 1,000,000 tons per annum.

As development work progressed, it became necessary to add to the number of power stations and isolated boiler plants, because of the limitations of steam power transmission over long distances. It was realized that this system involved an unnecessarily heavy expense for supplying power at widely separated points of application, and, therefore, the engineers of the company determined to take advantage of the economies of the electrical transmission of energy over long distances and provide a number of inter-connected generating plants, utilizing for this purpose prime movers already installed, supplemented by available water power and such additional steam power as would suffice to meet the growing demands of mines and mills.

Early in 1903, the first generating unit was installed in the central power station at Mineville. It consisted of a three-phase, 25-cycle, 3,300-volt alternator of 750-kilowatt capacity, direct-driven by a 1,000-horsepower engine; this generator supplied current for motor-driven air compressors and for motors which were installed to drive the machinery in mills Nos. 1 and 2.

The electrification of the properties has been carried out consistently and the system adopted is representative of modern engineering practice throughout; alternating current generators and induction or synchronous motors are used for practically all power applications. There are, of course, some small motor-generator sets supplying direct current for magnetic separators and for locomotive haulage, but the total capacity of direct current motors is less than 100 horsepower, whereas the generating plants with a combined output of 4,475 kilowatt serve alternating current motors totaling more than 5,500 horsepower.

The use of steam, except for prime movers, has been now practically abandoned, there being only two units, a hoist and a compressor, of the old steam-driven equipment still in service. There are also a few small pumps operated from the air lines for the pneumatic drills, but with these few exceptions electricity is used for all power purposes in both underground and surface work.

At present, active work is carried on at four mines, three of which are situated at Mineville, while the fourth lies a short distance north, the total area extending north and south about two miles, and east and west less than a mile. The mines and shafts are designated as follows: Old Bed mine with two shafts; Joker and Bonanza (these shaft houses being shown in Fig. 1); Harmony mine served by two shafts, "A" and "B"; New Bed by Barton Hill tunnel; and Smith mine by Cook shaft.

The relative location of the power stations and the arrangement of the transmission lines is clearly indicated in Fig. 4. It will be noted that current is received from four widely separated points, all interconnected, however, through the transmission system; the generators are all operated in parallel, and, with the exception of those in the

[1]From the *General Electric Review.*

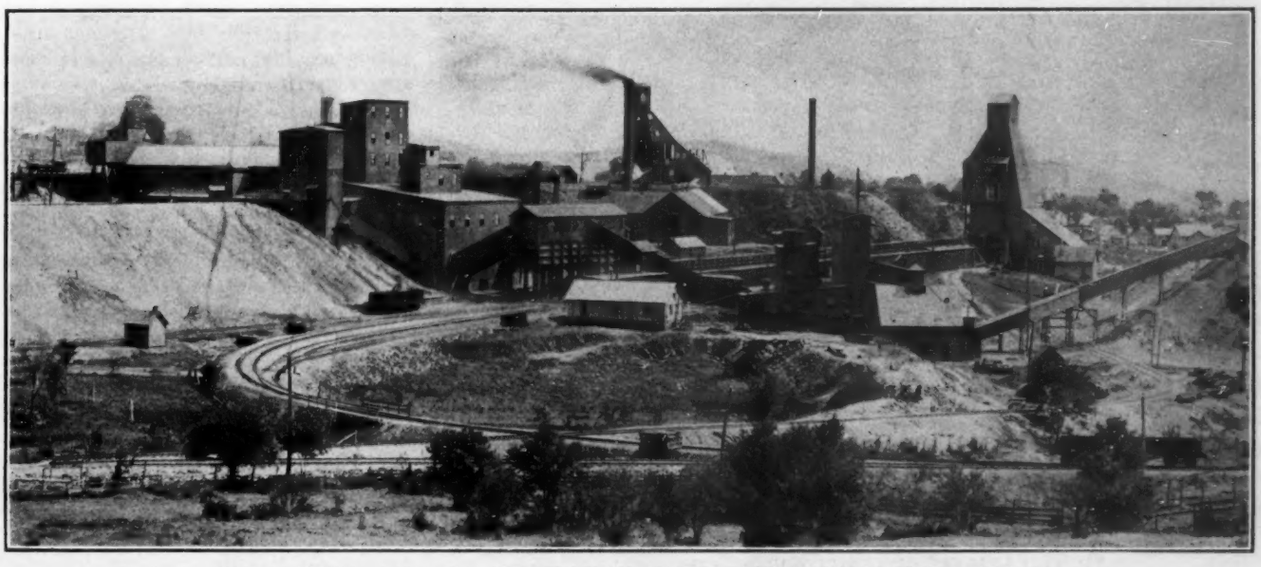


FIG. 1—JOKER, BONANZA AND CLORIAN SHAFT HOUSES, MILLS NOS. 1 AND 2, AND NO. 1 POWER STATION, MINEVILLE, N. Y.

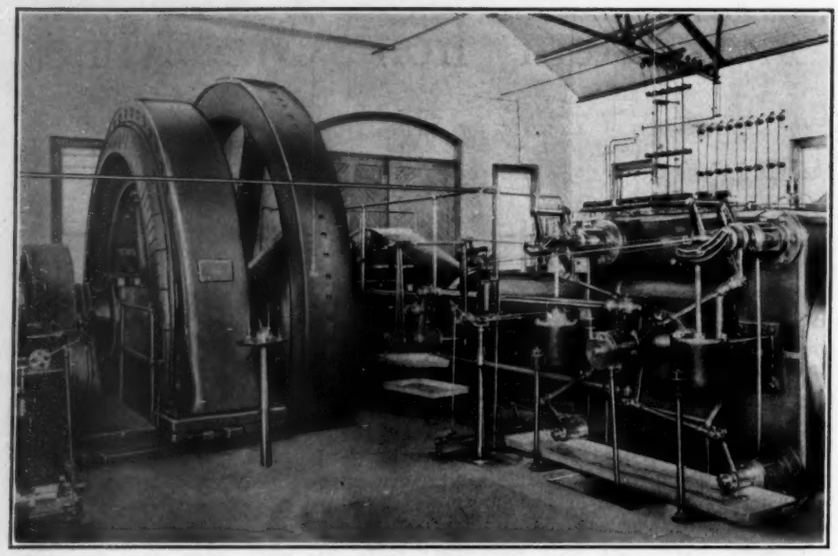


FIG. 2—ALTERNATOR IN THE CENTRAL POWER STATION, DRIVEN BY A 1,000-HORSEPOWER ENGINE

central power station, generate current at 6,600 volts, three-phase, 25 cycles.

The generating equipment of the various power plants is as follows:

At the central power station the original 750-kilowatt, 3,300-volt, engine-driven alternator already referred to has been supplemented by a 750-kilowatt, 1,500 revolutions per minute, mixed pressure turbine operated from the exhaust of the engine, which is run non-condensing; a varying amount of live steam, depending on the load conditions, being taken directly from the boilers. By means of this turbine the effective output of the plant is doubled and when the turbine is operated only on the exhaust steam, it develops about 600 kilowatt. The original boiler outfit comprised three 250-horsepower units, and when the turbine was installed, additional boiler capacity to the extent of 400 horsepower was provided; so that with slightly more than a 53 per cent increase in boiler equipment, 100 per cent was added to the available current supply from this station. The two generating units are shown in relative proportion in Figs. 2 and 3, and as they are identical in capacity, they afford a striking illustration of the compact construction and small amount of floor space required by the turbine set when compared with the engine-driven unit.

Situated on the Black river, about 5½ miles north of the central power station is Kingdom power station, a hydro-electric plant generating 375 kilowatt at 6,600 volts. The available water power, however, is considerably in excess of the plant capacity and the present generator will be superseded by a 750-kilowatt, 2,300-volt machine; the potential of the six-mile transmission line being raised to 13,200 volts by step-up transformers.

The most distant power plant is at Wadhams Mills, located on the Bouquet river, about 10½ miles north by east from the central power station, and containing a 300-kilowatt, 6,600-volt water-wheel-driven alternator. Current is transmitted at the generator voltage over a single circuit line, 9½ miles to Cook shaft substation at the Smith mine, which is also connected with the central power station by a single circuit line.

The water power plants at Kingdom and Wadhams Mills are not owned by Witherbee, Sherman & Co., but their entire output is purchased, payment being based on meter readings at incoming primary voltage.

The latest and most important generating station is located on the shore of Lake Champlain at Port Henry and consists of a thoroughly modern concrete power house containing one 800-kilowatt and one 1,500-kilowatt, 6,600-volt vertical shaft turbine alternator, provided with both turbine and motor-driven exciters. The compact arrangement of the machinery is indicated in Fig. 10. The switchboard equipment is typical of those used in the other generating and substations of the company.

From Port Henry a 6,600-volt, twin circuit transmission line is run about 4½ miles west to "A" and "B" compressor house, which is in turn connected with the central power station by a single circuit, 3,300-volt line, thus completing the interconnection of the four power plants. A short distance from Port Henry one circuit is tapped by a feeder line running to the Cheever

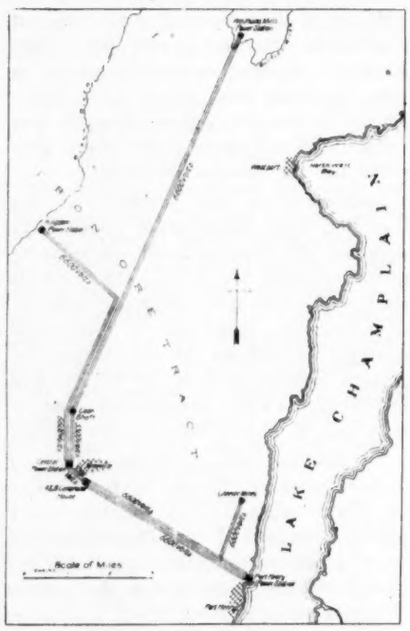



FIG. 4—ARRANGEMENT OF THE TRANSMISSION SYSTEM

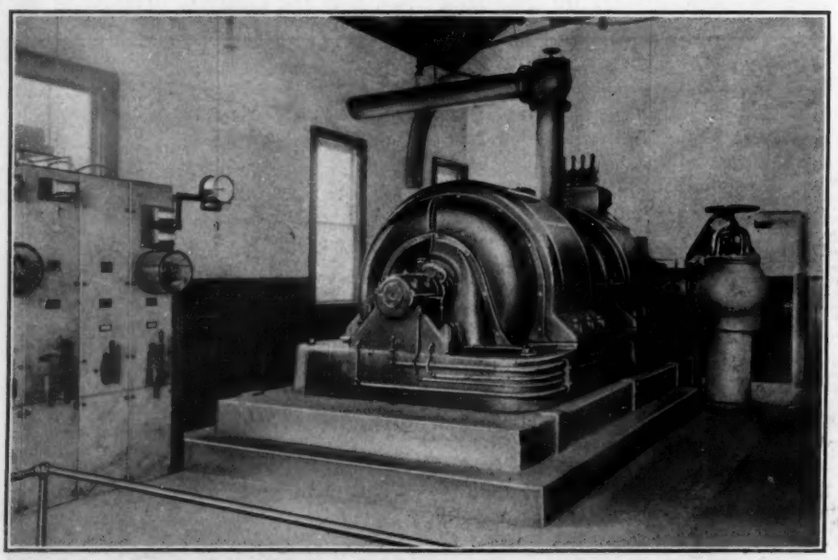


FIG. 3—MIXED PRESSURE TURBO-GENERATOR IN THE CENTRAL POWER STATION; CAPACITY, 750 KILOWATTS, 3,300 VOLTS

Iron Ore Co.'s workings, where alternating current motors aggregating about 1,150 horsepower are used.

All alternating current lighting is done through single-phase transformers and the demand distributed on the three phases so as to obtain the nearest feasible approach to a perfect balance of the load.

The step-down transformers for the Port Henry lines are installed in a small concrete house just outside of the "A" and "B" compressor house, and are arranged in two banks, with a duplicate blower set for supplying the air blast. The incoming lines are first brought to the switchboard in the compressor house and from there run to the two banks of transformers and back to the feeder panels on the switchboard, from which current is distributed at 3,300 volts.

In running the transmission lines cedar poles with wooden cross-arms and solid bare conductors have been used throughout, and lightning arresters have been

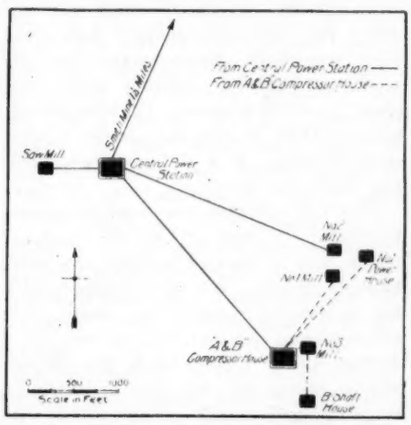



FIG. 5—FEEDER LINES FROM THE POWER STATION AND THE COMPRESSOR HOUSE

installed in the various power stations and substations.

An unusually high efficiency has been maintained throughout the generating and transmission system, and the cost of power delivered at the busbars, after allowing 10 per cent for interest charges and depreciation, has averaged 1.33 cents per kilowatt-hour, while at the Port Henry power station an average operating cost of 0.988 cents per kilowatt-hour has been maintained.

The effect of this low cost for power is clearly reflected in the expense of production—with meter records to indicate the exact current consumption of the various driving motors, the power cost for milling alone is 3.70 cents per ton crude, while that for high concentrate, including all operations from the receiving bin to the finished product, is 5 cents per ton.

For the distribution of current at Mineville there are seven main feeders

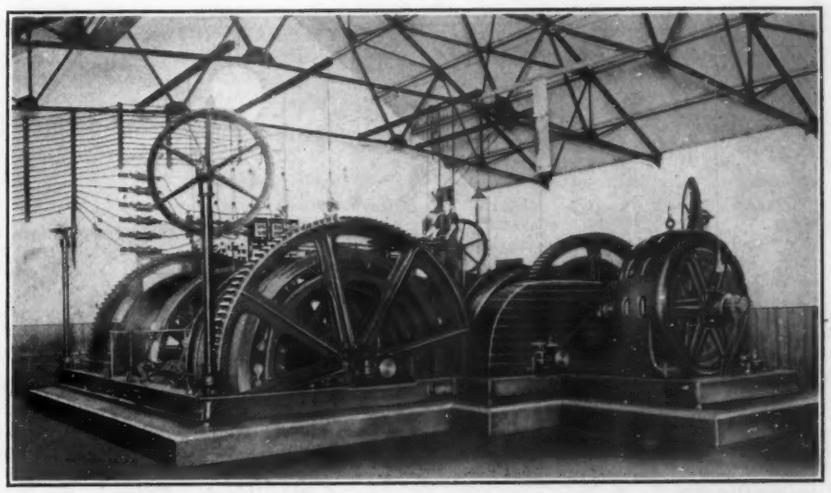


FIG. 6—MOTOR, 300-HORSEPOWER, 440 VOLTS, DRIVING A FOUR-DRIVE HOIST FOR A AND B SHAFTS, HARMONY MINE

operating at 3,300 volts, as shown in Fig. 5. These feeders terminate in banks of step-down transformers from which re-distribution circuits are run to the various alternating current motors, which, with the exception of four 3,300-volt machines, are all wound for 440 volts.

In the central power station a motor-generator exciter set is used, the driving unit being a 50-horsepower, 3,300-volt induction motor, while the auxiliary equipment includes a centrifugal pump for the condenser direct-driven by a five-horsepower motor, and a ten-horsepower motor operating an ash conveyor and elevator through belting.

From the Smith mine substation, current at 440 volts is supplied to two 75-horsepower motors belted to air compressors, and to a 100-horsepower motor geared to a double drum hoist and a 30-horsepower motor driving a triplex pump. The feeders run to Barton Hill tunnel, where a third compressor is driven by a 125-horsepower motor; and two electric hoists, one installed inside the mine on a slope and the other outside, are geared respectively to 22-horsepower and 35-horsepower motors. The third compressor has been superseded by the air service from the large machines in "A" and "B" compressor house and is now held only as a reserve.

The tunnel is provided with a 4½-ton direct-current haulage locomotive fitted with a double trolley which operates on a 220-volt metallic return circuit, current for its operation being supplied by a motor-generator set in No. 1 power house.

The locomotive feeder is tapped to supply a five-horsepower, direct-current motor, which drives a small triplex pump in the tunnel; the lighting of the tunnel is accomplished by tapping one of the compressor transformers for a 110-volt incandescent lamp circuit.

The third feeder from the central power station runs to Mill No. 2, in which all machinery, including crushers,

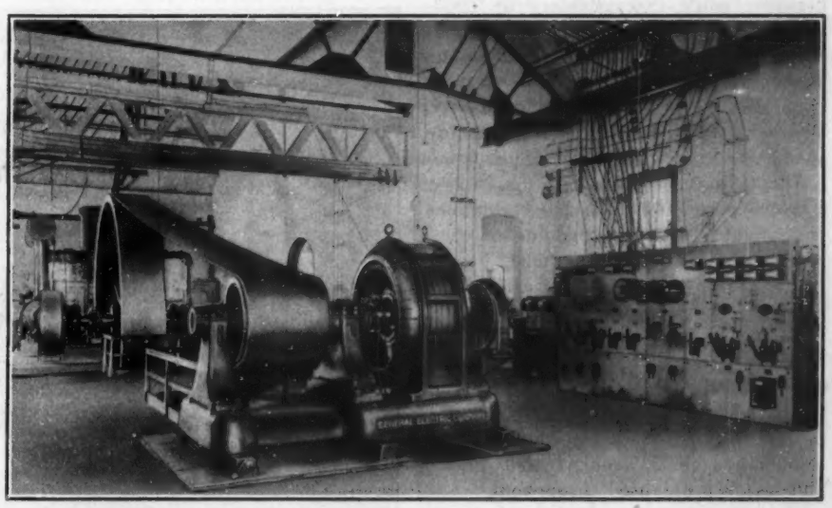


FIG. 7—SYNCHRONOUS MOTOR, 400-HORSEPOWER, 3,300 VOLTS, DRIVING A 2,500-CUBIC FOOT AIR COMPRESSOR

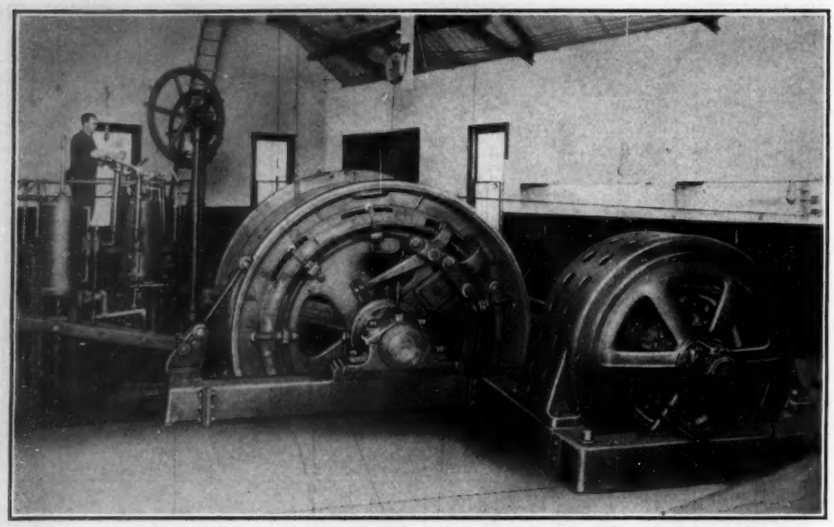


FIG. 8—FIVE-HUNDRED-HORSEPOWER, 440-VOLT, MOTOR DRIVING DOUBLE DRUM HOIST

rolls, elevators, conveyors, separators, screens, etc., is driven in groups by three 100-horsepower, 440-volt motors; and where, in order to haul the ore cars from the Bonanza shaft to the receiving bin at the mill, a 30-horsepower, motor-driven hoist is installed.

The half-mile line from the central power station to "A" and "B" compressor house serves to connect the two centers of distribution and thereby minimizes the danger of interrupted service due to a shut down in any of the power plants, or injury to the main transmission system, which runs through hilly country and may be subjected to a varying amount of lightning trouble.

From "A" and "B" compressor house, one 3,300-volt feeder is run to No. 3 mill, one to No. 1 mill and one to No. 1 power house, as shown in Fig. 5. In the compressor house itself there are five important motor applications: Two 200-horsepower, 440-volt induction motors drive two 1,250-cubic foot compressors, while two machines of 2,500-cubic foot capacity are driven by two 400-horsepower, 3,300-volt synchronous motors with direct-connected exciters. One of these sets is shown in Fig. 7, together with the compressor house switchboard.

The fifth application consists of a 300-horsepower, 440-volt, 250 revolutions per minute, motor geared to a compactly grouped four-drum hoist, Fig. 6, which serves "A" and "B" shafts of the Harmony mine. Each drum is 10 feet in diameter and carries 2,500 feet of 1⅛-inch steel cable for hoisting 3½-ton ore skips; the resistance for speed control is installed in a separate room. The drums may be operated singly or in combination, and hand-actuated brakes and clutches are used throughout.

The use of numerous induction motors, which, owing to the fluctuating character of the load that is inseparable from the operation of hoists, ore crushers, etc., frequently run for considerable periods at varying percentages of their normal rating, had a serious effect on the power factor of the system, and it was found impossible to maintain a power factor much above 65 per cent.

With the bulk of the load at Mineville grouped within a few thousand feet, however, it was entirely feasible to provide synchronous condensers to supply the wattless component of the current and thereby obtain a close approximation to unity power factor; and, as the air compressors constituted an ideal load for synchronous motors, the engineers of the company determined to utilize them, of a size sufficient to carry the compressor load and at the same time compensate for low power factor. The two units of this type in the compressor house are operated at 80 per cent power factor, leading current, with the result that the power factor is now maintained at from 88 to 90 per cent throughout the system at Mineville.

From the compressor house a short feeder line is run to a substation in Mill No. 3, in which all machinery is driven in two groups by two 200-horsepower, 440-volt motors, which are separated from the mill machinery by a wall and operate it through countershafting. Mill No. 3 is constructed of reinforced and block concrete throughout and is typical of the form of construction adopted as standard for future work by the company; it is a double mill, each half being capable of independent operation, and served by its own driving motor, so that work at partial capacity can be carried on with only a proportionate demand on the power system, and injury to any part of the machinery will not involve a complete shut down. In the event of injury to either driving motor it can be readily replaced by a 300-horsepower machine which is held in reserve in the motor room.

As all the ore at Mineville is magnetite, the mills are equipped with magnetic separators, direct current for the separators and for lighting being supplied by a 35-kilowatt, 125-volt motor-generator set in mill No. 3, the driving unit of which is a 50-horsepower, 440-volt induction motor.

This mill receives ore from two nearby shafts, "A" and "B" of the Harmony mines, and is situated between the shaft houses. In the "A" shaft house, which has a 440-volt supply line, there is a gyratory ore crusher, belt-driven by a 35-horsepower motor, while the 20-inch belt conveyor to the mill is operated by a 20-horsepower motor. The "B" shaft house is similarly equipped, except that a 3,300-volt feeder is run to it from No. 3 mill, and a three-phase, step-down transformer and control panel are installed in the shaft house. A 35-horse-

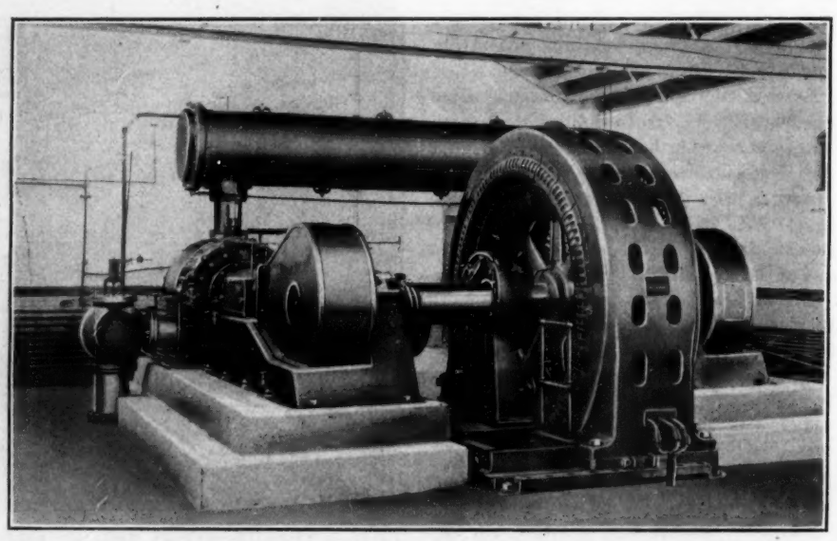


FIG 9—INDUCTION MOTOR, 400-HORSEPOWER, DIRECT-CONNECTED TO 2,500-CUBIC FOOT COMPRESSOR IN CHEEVER SUBSTATION

power, motor-driven hoist is utilized for hauling ore cars up a low graded trestle to the receiving bin above the crusher. It will be noted that the motors in this service are not housed in, or in any way protected from the dust which is inevitably prevalent during their operation, and it has been found inexpedient to clean them except at such times as when repairs are being made or motor bearings changed. The simplicity and durability of the induction motor is such that in spite of these conditions they operate with unimpaired efficiency and safely withstand the heavy overloads which recur at frequent intervals in this service. The motors in the power stations and compressor houses, however, are cleaned at least once each week, the work being usually performed with compressed air.

*Pumps*

The geological conditions at Mineville are such that only comparatively small volumes of water collect in the mines and the drainage requirements do not constitute a serious factor in the power supply, as the largest pumps used operate against a maximum head of 750 feet with a capacity of 100 gallons per minute. In "B" shaft, one 400-foot head, 200-gallons-per-minute pump is driven by a 30-horsepower motor and in "A" shaft a 12-horsepower motor drives a 100-gallons-per-minute pump. All mine pumps are of the reciprocating type, with motor and pump mounted on a common base and connected through gearing.

The conductors in the mine shafts for the pump motors, lighting, and locomotive circuits are lead-covered cable, which is used to insure maximum protection, while iron conduit is utilized for signal wires in shafts and for the wiring of mills and power houses.

The machinery in mill No. 1 is operated in five groups by three 75-horsepower and two 60-horsepower motors fed from the secondaries of 3,300-440-volt transformers located in the mill, while in the Joker shaft house a jaw type crusher is driven by a 35-horsepower motor.

The No. 1 power house is served by a separate 3,300-volt feeder and contains two motor-generator sets, the larger unit supplying direct current at 220 volts for the operation of two locomotives and other machinery, as well as for lighting in the Old Bed mine and shafts. A small hoist at this mine is used for sinking, which is semi-portable in type, and is driven by a 15-horsepower motor. A 20-horsepower hoist serves a slope at the No. 7 level in the Bonanza shaft, while a 20-horsepower motor drives a three-car tipple at the No. 7 level of the Joker shaft. The larger set consists of a 110-horsepower, 3,300-volt induction motor driving a 75-kilowatt, 250-volt, three-wire, direct-current generator at 750 revolutions per minute. The smaller set is used solely for lighting and comprises a 50-horsepower, 440-volt motor, driving a 35-kilowatt, 125-volt generator at 1,500 revolutions per minute.

In this power house there is also a 1,250-cubic foot compressor, belt-connected to a 200-horsepower motor, and a double-drum hoist, serving the Joker shaft and driven through gearing by a 500-horsepower, 440-volt, 250-revolutions-per-minute motor. This hoist has 10-foot drums, each with 2,500 feet of 1⅛-inch steel cable, the normal hoisting speed being 900 feet per minute.

For the control of the hoist motor a contactor panel has been installed, that provides for seven-point acceleration and is equipped with current limiting and overload relays. The entire hoisting outfit is compactly arranged and every unit is fully in view from the operating platform.

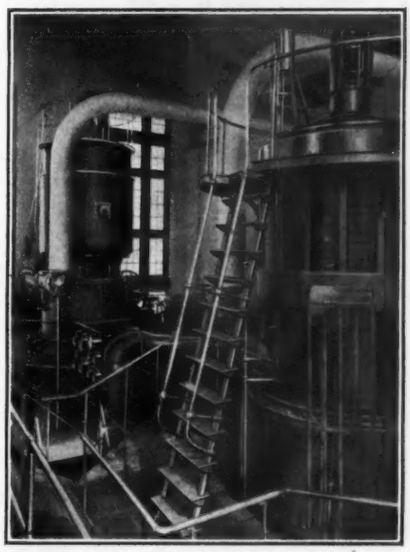


FIG. 10 — ONE 800-KILOWATT AND ONE 1,500-KILOWATT VERTICAL SHAFT TURBO-GENERATOR IN PORT HENRY POWER STATION

In view of the number and diversity of the motor-driven machines for both mining and milling operations and the fluctuating character of the loads of many of the driving units, it is evident that the generating system must be capable of safely carrying heavy overloads for varying periods, especially as the total rated capacity of the motors installed is about 20 per cent greater than that of the generators.

The load factor of the system is unusually high for mining service, and is maintained at about 70 per cent. The men work in two shifts of 10 hours each, and when the steam power plants are shut down on Sundays and holidays, the necessary current for lighting is supplied by the water power stations.

A liberal use of meters has been found indispensable to accurate apportionment of the power cost among the various operations, and recording wattmeters are connected on all feeder circuits, while all motors except those in the mills are individually metered, the mill motors being metered in groups for each mill. In addition to giving reliable data in regard to power consumption, the meters afford a means of readily ascertaining whether or not the machinery is operating at its normal efficiency, as an unusual power demand often serves as an indication of injury or mechanical defects which can then be investigated and corrected before becoming serious enough to interfere with production.

*Results Justify Electric Drive.*

In addition to supplying the electric power requirements of their own equipment, the transmission system of Witherbee, Sherman & Co. delivers current at 6,600 volts to a substation at Cheever, which serves the mines of the Cheever Iron Ore Co., where induction and synchronous motors aggregating 1,150 horsepower are used. Current is delivered at primary voltage and is metered at the receiving end.

In conclusion, it should be stated that in planning the system of power transmission and applying motors to the various machinery, each division of which had widely different load characteristics, the engineers of Witherbee, Sherman & Co. have endeavored to develop thoroughly practical standards in the size and type of driving unit employed, so as to obtain the maximum economy in the cost of power commensurate with high efficiency in the operation of the motors, as well as freedom from interrupted service and a uniformly high rate of production. The results have fully justified the abandonment of steam drive, except for prime movers; and, in future extensions now being arranged for, electricity, except for air service in the mines, will constitute the sole source of applied power. All the electrical apparatus in the present equipment is of General Electric manufacture.

---

The Pittsburgh Railways Co. has announced appropriations for extensive improvements this year to involve the expenditure of $6,000,000 providing for power houses and substations, to cost $700,000, and for car barns, shops and machinery to cost $467,000. Orders for these improvements, as well as for overhead line and car equipment, will be placed before the end of this month.

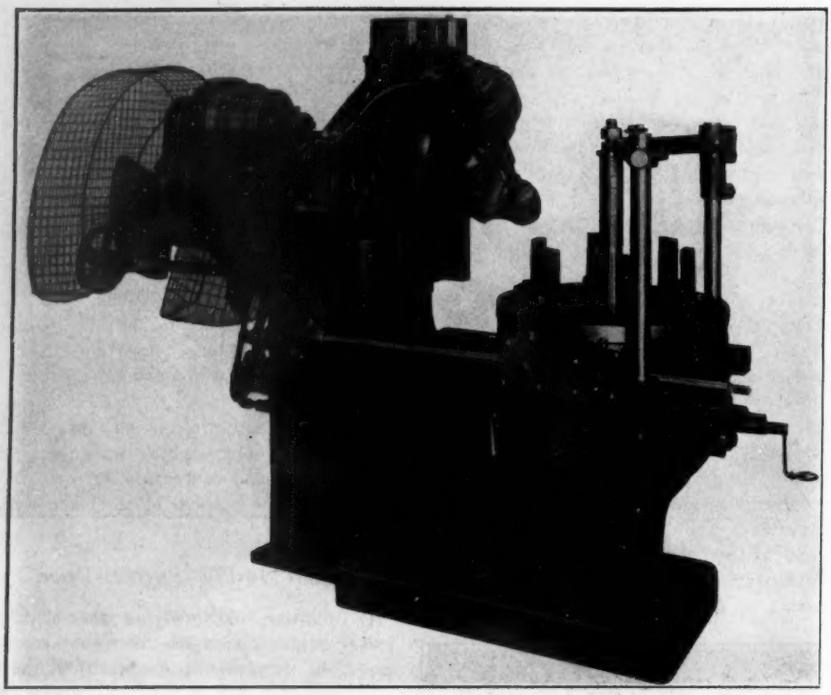


FIG. 1—FARWELL UNIVERSAL SPIRAL GEAR HOBBER

## Farwell Universal Gear Hobber

The Adams Co., Dubuque, Ia., has added to its line a new gear hobbing machine, designed to cut spur and spiral gears, worm wheels and worms up to 24 inches in diameter, 3-pitch in cast iron and 3½-pitch in steel. This machine is capable of an exceedingly wide range of feeds and table speeds. It can be arranged to cut a single thread worm or a screw of fine pitch and also worm wheels, spiral or spur gears with any pitch or number of teeth, including all prime numbers up to over a thousand.

The vertical feeds of the cutter head range from 0.002 to 0.500 inches per revolution of the table. The table may be geared to make one or two revolutions to each revolution of the cutter, or it may be geared to make one revolution to a thousand or more revolutions of the cutter. This wide range of feeds and table speeds is, of course, unnecessary for ordinary spur, spiral and worm gear cutting and no additional complication was added to the mechanism to obtain it. The design of the table drive and feeds is such that by compounding a comparatively small number of moderate size gears the various speed ratios may be attained.

The machine is especially designed for gear and worm hobbing, but the slow table travel obtainable relative to the cutter speed, enables it to be used also as a continuous or circular milling machine. A special spindle and bracket, shown in Fig. 4, is used in this case. The machine is provided with outside drive and the unusual weight and width of the saddle and swivel increases the rigidity to a great extent. The cutter spindle is large and has a hole in it through which the arbor proper passes; it is driven by a long key and feather. Adjusting nuts on the arbor at each end of the spindle provide for an end adjustment of the hob to facilitate setting one tooth central and to shift to fresh cutting positions.

The spindle is driven by a steel spur gear and pinion, and both the spindle and pinion shaft run in adjustable bronze bearings. There is only one pair of bevel gears in the spindle drive and no long splined shaft and sliding key is used.

A reducing gear of large diameter is interposed between the cone pulley shaft and the universal joint shaft which communicates the power to the spindle. The universal joints are of special design, very heavy, with large wearing surfaces of steel on bronze and have adjustments to compensate for wear. Felt oil-retaining pads are used to facilitate lubrication.

An automatic stop and a rapid power return is provided for the cutter head. The table saddle has a power feed ranging from 0.00025 to 0.375 inches per revolution of the table. An automatic depth stop is provided for worm wheel hobbing.

A set of 120 change gears is required to give the feeds mentioned above and these will cut all gears containing up to 200 teeth and many composite numbers above this. Special gears are used to cut all other numbers, including the prime numbers. The countershaft is provided with three clutch pulleys, furnishing a hobbing speed in both directions and a slow speed for driving milling cutters.

The lubricating pump is arranged to run in the right direction when the direction of spindle is reversed. The table is driven by a steel worm engaging a bronze ring worm wheel. The worm wheel is 20 inches in diameter. Provision is made for taking up any wear either in the mesh or end motion of the worm. The table is heavily ribbed, but the top between the ribs, instead of being level, is depressed in a cone shape with a hole in the center. This conducts the lubricant and all cuttings

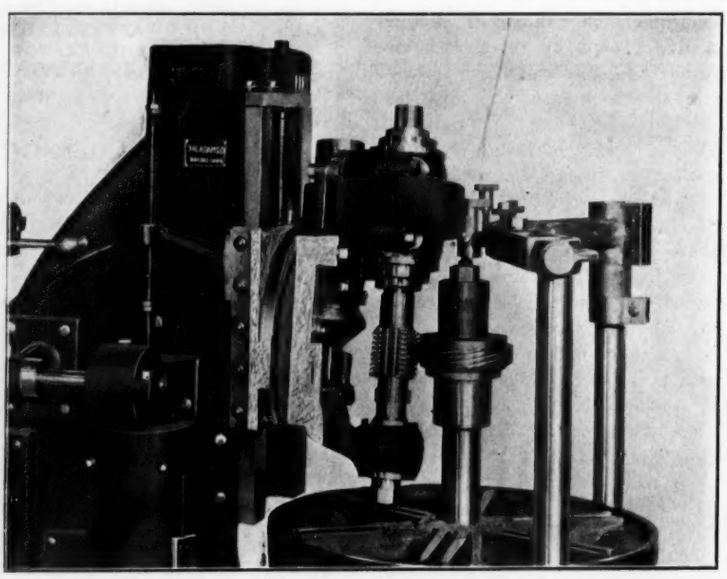


FIG. 2—HOBBING A SPIRAL GEAR

into a pan in the base of the machine. The oil drains out of the pan into a tank below. The pan may be easily removed through the door and its contents dumped, handles being provided for this purpose. The weight of the machine complete is about 3,900 pounds.

## Improvements in Jones Step Process

For the past four years experiments have been conducted by John T. Jones, of Iron Mountain, Mich., for the purpose of perfecting a method of profitably metallizing the low grade iron ores of the Lake Superior district. In this connection Mr. Jones invented the step furnace, described in THE IRON TRADE REVIEW, Nov. 5, 1908. Other articles following the improvements to the process have appeared from time to time since that date.

New step furnaces have recently been built at the Kloman mine, Republic, Mich. Experiments are under way on the Kloman ores and the details of this recent work have been described by Albert E. White, of the University of Michigan, for the Michigan geological survey. The following has been abstracted from an advance publication of Mr. White's paper:

The low-grade Kloman ores will be mined by the glory-hole method, hoisted and crushed in a No. 6 McCully gyratory crusher. This will pass over 1½-inch grizzlies, the oversize going to a gyratory crusher. The whole product will then pass through rolls and screens until it is broken to ⅝-inch size or smaller. This product will then be metallized in Bruckner roasters, in charges of 15 tons each. These roasters are arranged in series of two. While the ore in one is being metallized, that in the other is being heated by the passing through it of the waste gases from the first roaster. The metallized product is dumped into a water-sprayed pocket. The partly disintegrated product is then treated on a jig to remove any good merchantable coke that may be present. The concentrates are conveyed to a Bruckner drier, after which they are crushed to the proper size and magnetically separated into metallized ore and fine coke.

The Bruckner roasters are 18½ feet long by 8 feet, 8 inches internal diameter. It is stated that they will require 12 horsepower to start, and 5 horsepower to operate when in motion. It is expected that each one will hold 15 tons of ore at a charge, and it is hoped that four hours will be required for the metallizing operation, two being consumed in heating, and two in the reduction, or metallization. By placing them in series of two, and utilizing the waste gases, it is hoped that a charge of 15 tons of ore will be available every two hours from the two roasters. These roasters are equipped with oil burners for giving the supplementary initial heat.

Charges of coal will be put into the roasters at the proper time for the purpose of completing the reduction of the ore. The roasters also have a 9-inch lining of fire brick, and at certain positions on the inside are placed fire brick projections to serve as lifters, for the purpose, if possible, of getting the coal underneath the ore in order that the escaping volatile gases may have an opportunity to come into as close contact with the ore as possible. The tube will revolve at varying speeds, depending upon conditions; it has a variance of from one revolution in 40 minutes to 10 revolutions per minute. The metallizing and concentrating plant will be electrically driven throughout. The machinery includes a 200-horsepower Corliss engine, and a 150-kilowatt alternating current generator. It will probably be impracticable to obtain a product containing more than 85 per cent iron, according to Mr. White, and it is said that such a product will also probably contain from 0.1 to 0.2 per cent sulphur, and for this reason

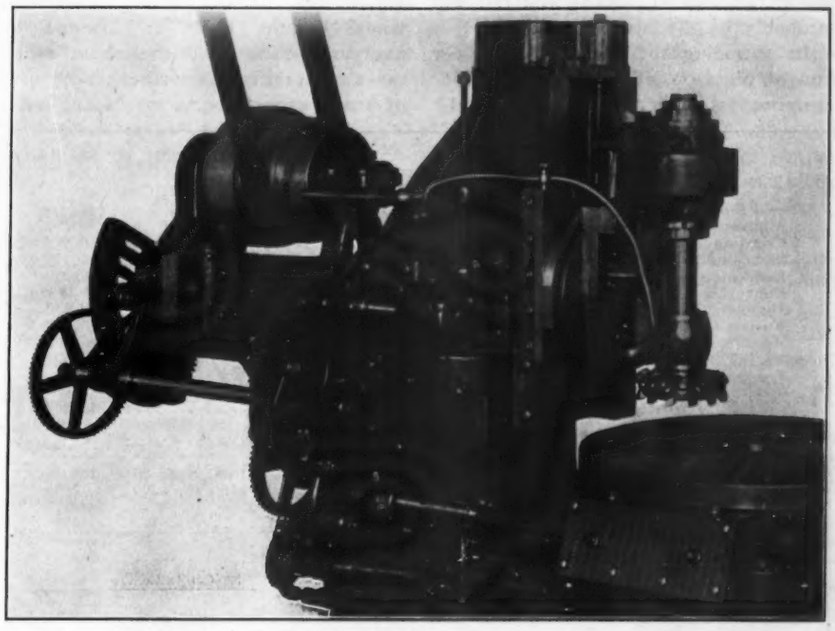


FIG. 4—THE HOBBER USED AS A VERTICAL MILLING MACHINE

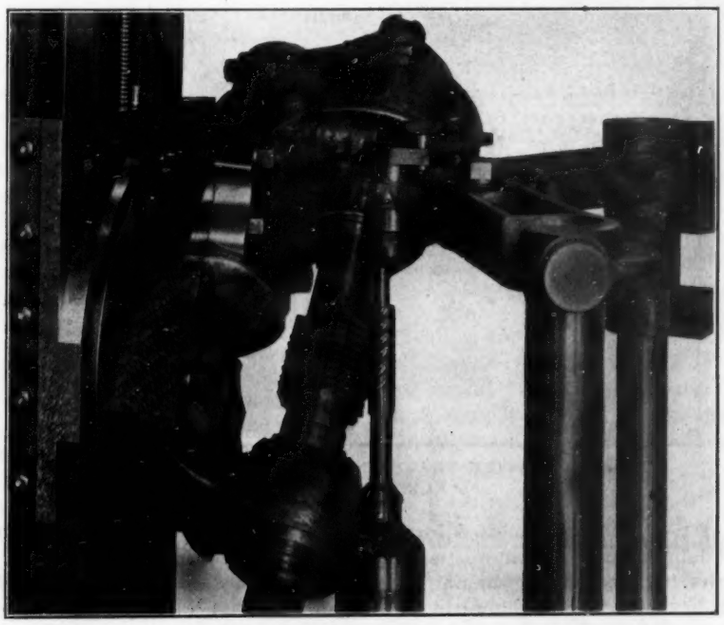


FIG. 3—HOBBING A WORM

the natural outlet for the material will probably be the blast furnace.

In obtaining the cost of $12.06 per ton of pig iron, shown in the accompanying table, it is stated that the crude ore is credited with containing but 1 per cent of moisture, and 42 per cent of gangue, of which 35 per cent is silica. It is said that as 20 per cent of the iron present is lost in the process of magnetic concentration, it will be necessary to use 2.55 tons of crude ore in order to obtain a concentrate containing 85 per cent of iron. It is hoped that the crushing, screening, concentrating, conveying, jigging and repair costs will be materially reduced when operating on a large scale. Chicago has been assumed as the smelting center; it is expected that it will require roughly one-half ton of limestone to do the necessary fluxing. By assuming 1,600 pounds of coke for a ton of silica, and 300 pounds of coke for a ton of metal, the total of 500 pounds of coke is claimed as the amount required for a ton of pig iron; 1,000 pounds, however, have been allowed. While some experiments have been made on other ores, present efforts are being exerted toward the problem of treating successfully the Kloman ore.

**Estimated Cost of Treating Low Grade Kloman Iron Ores.**

Mining and Metallizing

| | | |
|---|---|---|
| Mining | 2.66 tons @ $0.30 | $0.798 |
| Crushing | 2.66 tons @ 0.08 | 0.213 |
| Screening | 2.66 tons @ 0.05 | 0.130 |
| Concentrating | 2.66 tons @ 0.08 | 0.213 |
| Conveying | 2.66 tons @ 0.10 | 0.266 |
| Jigging | 2.66 tons @ 0.05 | 0.133 |
| Fuel | | 3.180 |
| Repairs | 2.66 tons @ 0.10 | 0.266 |
| Tailing disposal | 1.66 tons @ 0.08 | 0.133 |
| Freight | 1.00 ton @ 1.50 | 1.500 |
| Total cost per ton of metallized product at Chicago | | $6.832 |

Smelting

| | | |
|---|---|---|
| Metallized ore | 1.18 tons @ $6.83 | $ 8.06 |
| Limestone | 0.50 ton @ 1.00 | 0.50 |
| Coke | 1,000 lbs. @ 4.50 | 2.25 |
| Labor and repairs | | 1.25 |
| Cost per ton of pig iron at Chicago | | $12.06 |

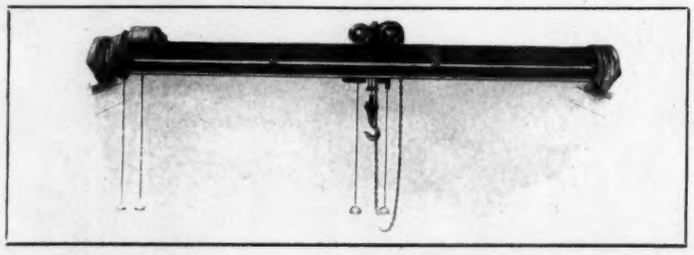
Analysis

| | Crude ore, per cent. | Concentrates, per cent. |
|---|---|---|
| Iron | 40 | 85.0 |
| Silica | 35 | 12.5 |
| Other gangue | 7 | 2.5 |
| Moisture | 1 | .... |

## Light Capacity Crane With Electric Hoist

A combined electric and hand power crane of moderate capacity and limited speed, has been designed by the Northern Engineering Works, Detroit. The crane is built in one, two and three-motor types and when motors are omitted a hand gear, operated by a pendent hand chain is substituted. For general use, the travel of the hoist and bridge is actuated by motors, although in some cases, especially when the cranes are of small capacity or short span, only a hoist motor is used. In that case the travel of the crane is controlled by hand. As shown in the accompanying illustration, the crane bridge is of the double girder type with the trolley traveling on top of the girders. The hoist is suspended from the trolley between the bridge girders. When the crane is built for hand travel the axles are equipped with roller bearings lined in steel cages, but when designed for motor travel the bearings are bronze. Either direct or alternating current motors can be used.

The gearing of the hoist is enclosed and the hoist can be bolted or attached to the trolley in such a manner as to permit of its removal and its use in another part of the shop if desired. Wire rope is used for hoisting and all of the gears are of the cut type and are enclosed for internal lubrication. An automatic stop prevents the hook from running into the drop. Hoisting and lowering are accomplished by power and the load is automatically controlled and held in place by an automatic brake. This crane is made in capacities ranging from 1 to 6 tons and the spans vary from 10 to 40 feet, to accommodate the width of the building in which the cranes are installed. These cranes are well adapted for yard work, for service in foundries, and for use in cleaning and shipping rooms, store houses, machine shops, etc. The accompanying illustration shows a two-motor crane with the hoist and bridge travel actuated by motors and the trolley travel controlled by hand.



LIGHT CAPACITY TRAVELING CRANE, EQUIPPED WITH ELECTRIC HOIST

## Book Reviews

**Foundry Practice,** by R. H. Palmer; 332 5¼ x 8-inch pages; illustrated; published by John Wiley & Sons, New York, and furnished by THE IRON TRADE REVIEW, Cleveland, for $2, postpaid.

The author is a practical foundryman of wide experience and, while engaged as an instructor in foundry practice at the Worcester Polytechnic Institute, Worcester, Mass., he was handicapped by a lack of suitable textbooks, and the method of instruction he followed is presented in this volume. From the simplest type of mold, the students and apprentices are gradually led to the more difficult lines of work in green and dry sand and loam. From the many possible examples which might have been used to illustrate the different practices, only those have been selected which are typical of the various classes of work. In the preface the author states that he has endeavored to make a textbook for the student, apprentice and molder rather than a reference work for the trained foundryman, and the work indicates how well he has succeeded.

Elementary foundry work is discussed in the opening chapters and from simple floor work the author, in logical sequence, carries the reader to the more complicated molding operations such as the use of sweeps, bedding-in patterns, etc. Chapters are also devoted to making molds for steel castings, dry sand cores, methods of gating and arranging risers, shrinkheads and feeding heads; the treat-

ment of castings while cooling, cleaning castings, molding machine work, etc. The various methods of repairing broken castings are likewise briefly discussed and include burning, thermit and oxy-acetylene welding. Cupola practice and the making of mixtures are discussed at length and many valuable suggestions are made which are based on the practice of the author. A glossary of foundry terms is also included, which is exceedingly comprehensive and the appendix contains numerous valuable tables, analyses, mixtures, etc. As a textbook on foundry work this volume should prove of great value to students, apprentices and molders.

---

**A Manual of Fire Assaying,** by Chas. H. Fulton; 205 6 x 9-inch pages; published by the McGraw-Hill Book Co., New York City, and furnished by THE IRON TRADE REVIEW for $2, postpaid.

The subject matter of this work, which is now in its second edition, has been largely revised and additions have been made to the discussion of assay furnaces, assay fluxes, cupellation and special methods of assay have been added. This work treats the subject of fire assaying from the scientific and rational point of view rather than from that of the rule-of-thumb. The subjects discussed include assay furnaces and tools, method of sampling, weighing, reduction and oxidation reactions, assay slags, cupellation, assay of bullion and errors in the assay for gold and silver. The work concludes with a chapter on the assay of tin, mercury, lead, bismuth and antimony.

---

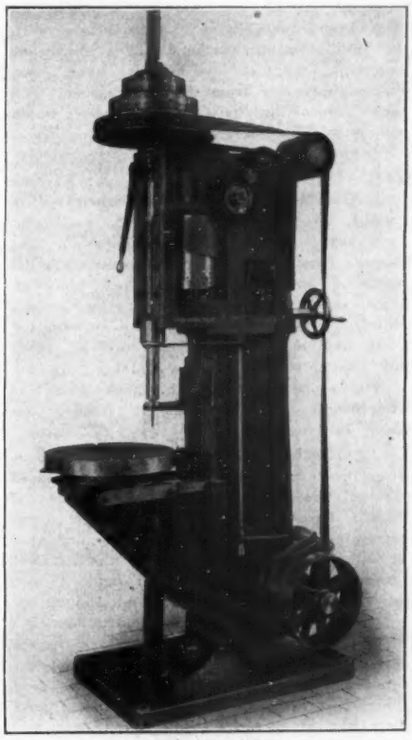
**Iron and Steel Foundry Practice;** by C. Geiger, Vol. 1; 472 7½ x 10½-inch pages; illustrated; published by Julius Springer, Berlin, Germany.

This German work will be issued in three volumes and, while exceedingly comprehensive, as indicated by the first volume, recently published, the practice considered is that largely prevalent in German foundries. The various subjects discussed have been contributed by foundrymen and engineers who have specialized in the various branches of the founders' art considered. The chapter on the history of the iron and steel foundry industry was written by Ludwig Beck, while the chapter on iron ore was contributed by Dr. E. Trescher. Among the subjects discussed in the first volume are ferro-alloys, scrap, chemistry of the iron and steel foundry, physical properties of cast iron, fuels, temperature measurements, iron and steel foundry refractories and mixtures for iron, steel and brass foundry practice. The second volume will treat largely of molding and melting practice and the third volume will be devoted to the arrangement, equipment and management of foundries.

---

**Engineering as a Vocation,** by Ernest McCullough; 201 5¼ x 8-inch pages; published by the David Williams Co., New York, and furnished by THE IRON TRADE REVIEW for $1, postpaid.

The subject matter of this work has been rearranged with additions from a number of addresses given before technical schools and associations by the author. It is published primarily for the information of parents that they may act wisely in selecting a career for their sons. The work and education of the engineer are discussed and home study courses are outlined. Pertinent suggestions are also made with reference to "Hunting and holding a job" and the problem of whether it pays to study engineering is also discussed. The work concludes with the opinions of a number of engineering editors on engineering as a profession.



AUTOMATIC DRILLING MACHINE

---

## Automatic Drilling Machine

In the accompanying illustration is shown an automatic drilling machine built by Baker Bros., Toledo, O., which is designed to greatly reduce the drilling time. The machine is furnished either with a plain or automatic indexing table. On the plain table the operator places the work underneath the drilling spindle and trips the machine in a manner similar to operating a punch press. The spindle advances quickly to the work, the cutting tool passes through the work and the feed stops. The operator then removes the finished piece, placing another in position and again trips the foot lever. This enables the operator to handle a piece of work with both hands, thereby insuring rapid production. The revolving table is provided with an automatic indexing movement, which, at the instant the spindle is withdrawn, revolves the table to the next position, placing the new piece of stock under the working tool. The period occupied by the withdrawal of the working tool and the indexing of the table varies from 2 to 3 seconds. Change gears are provided so that the table may be made to index to any required number of divisions from 5 to 80. As the table is provided with an in-and-out movement it may be used to drill holes in circles of any radius within the capacity of the machine. A standard machine will drill holes in circles from 4 to 20 inches in diameter. The table is provided with a scale which shows the setting in regard to the diameter of the circle. In using this machine for chuck work, from six to eight chucks are usually provided on the table. The operator is only required to chuck and remove the work and the machine requires no further attention, other than to keep the tools in good condition. If a drill should break the machine can be stopped instantly at any point.

The capacity of the machine is 1 inch in steel with high speed drills and the vertical feed is 6 inches. The minimum section of the spindle is 1¼ inches and the travel, 6 inches. Six speeds are provided varying from 200 to 800 revolutions per minute. Speed changes are obtained by a three-step cone pulley and a two-speed countershaft. Ball bearings are used throughout, with the exception of the spindle saddle. The cone pulley runs on ball bearings surrounding a vertical post which operates the spindle and is driven from the cone pulley, by a self-centering drive. The feeds are obtained by a revolving cam drum, the cams acting over a roll on the spindle saddle. The swing of the drill from the center of the spindle to the frame is 8 inches and the machine can be arranged for motor drive if desired.

## New Catalogs

DIRECT CURRENT SWITCHBOARDS.—The General Electric Co., Schenectady, N. Y., has issued a bulletin illustrating and describing panels designed for general use in central stations. The list of panels includes both generator and feeder types; they are made for 125, 225 and 600 volts.

CORROSION OF BOILER TUBES.—The National Tube Co., Pittsburgh, has issued a bulletin containing an article on the "Corrosion of Boiler Tubes." This treatise is an abstract of a paper which was written by Rear Admiral John D. Ford, United States Navy, which was read before the American Society of Naval Engineers in 1904.

STEAM TABLES FOR CONDENSER WORK.—The Wheeler Condenser & Engineering Co., Carteret, N. J., has issued a booklet containing original steam tables for condenser work. This publication discusses also the subject of vacuum measurements and the correction of vacuum gage and barometer readings.

SMALL PLANT DIRECT CURRENT SWITCHBOARDS.—A bulletin recently issued by the General Electric Co., Schenectady, N. Y., is devoted to a line of panels which are designed for the control of three-wire generators. These panels are arranged for 125 and 250 volts, and in capacities of from 25 to 100 kilowatts.

SMALL TURBO-GENERATOR SETS.—The General Electric Co., Schenectady, N. Y., in a recently issued bulletin, illustrates and describes its line of turbo-generator sets ranging from five to 300 kilowatts in capacity. All of these sets are of the horizontal type and may be operated either condensing or non-condensing and at any steam pressure above 80 pounds for the smaller sizes and 100 pounds for the larger units.

RAPID FREIGHT HANDLING EQUIPMENT.—A booklet issued by the Brown Hoisting Machinery Co., Cleveland, is devoted to a few of the many types of equipment built by this company for the rapid handling of package freight and for economically transferring all kinds of goods at railroad and steamship terminals, warehouses, manufacturing plants, lumber yards, wholesale stores, etc. The booklet includes numerous illustrations.

HAND-MADE CHAIN.—The Weimer Chain & Iron Co., Lebanon, Pa., manufacturer of chain for steam shovels, dredges, cranes and for general conveying purposes and use in foundries, on ships, etc., has completed a new catalog devoted to this product. This chain is guaranteed to be strictly hand-made and thoroughly tested after completion. It is produced from iron having a tensile strength of 48,000 to 50,000 pounds per square inch, an elongation in eight inches of 25 per cent, and a contraction of area of about 40 per cent. The catalog contains price lists and other data.

GRINDING WHEELS AND MACHINERY.—The Norton Co., Worcester, Mass., has issued a handsomely illustrated, 142-page catalog devoted to its widely diversified line of grinding wheels and machinery. The Norton products include: Alundum grinding wheels, crystolon grinding wheels, alundum grain for polishing, crystolon grain for polishing, India oil stones, crystolon sharpening stones, glass-cutting wheels, razor hones, scythe stones, alundum refractories, valve grinding compound, rubbing bricks and stones, grinding wheel dressers and grinding machinery. The catalog includes cross-sectional views and lists of grinding wheels as made especially to fit the various types of grinding machines. The book also includes the usual tables of grinding wheel speeds, etc.

THE CARE OF CHAINS.—Under this title the Jones & Laughlin Steel Co. has issued an eight-page treatise printed in two colors, which should prove of value to all users of chains. It contains many suggestions relating to the care of chains to increase their life, and it is stated that the most frequent cause for discarding chains is due to breakage which can be traced to crystallization. The treatment of chains to prevent and overcome crystallization is explained. It is stated that by this treatment the chains will be restored to their original condition, thereby greatly increasing their period of usefulness.

ELECTRIC FANS. — The Fort Wayne Electric Works of the General Electric Co., Fort Wayne, Ind., has issued a new bulletin, devoted to its line of electric fans for 1912. These are designed for all standard voltages and frequencies and, while several of them are substantially the same in appearance as those of last season, various improvements have been incorporated in connection with the oscillating devices and other important details. Technical descriptions have been omitted purposely from the bulletin, and only such information has been included which will enable purchasers to order correctly.

TWIST DRILLS, REAMERS, CHUCKS, ETC.—The Morse Twist Drill & Machine Co., New Bedford, Mass., has issued a new catalog, which is the largest and most complete ever compiled by this company. This concern manufactures an extensive line of products, including increase and constant-angle twist drills, reamers, chucks, milling cutters, taps, dies and general machinists' tools and machinery. These are all listed and illustrated in the new catalog. In addition, a large number of new tools and attachments, too numerous to itemize, are listed for the first time.

ELECTRIC FANS.—The Emerson Electric Mfg. Co., St. Louis, in a recently issued catalog, describes and illustrates its line of electric fans, both for alternating and direct current. For the season of 1912 a number of new types have been added to the list and these include 8-inch, 12-inch and 16-inch swivel-trunnion fans, 12-inch and 16-inch oscillators, and slow-speed, swivel-trunnion and oscillating fans of the residence type for direct current. As a result of important improvements in alternating current desk fans, the company is also enabled to offer a complete line of three-speed, induction desk fans in both the swivel-trunnion and oscillating styles.

ALTERNATING CURRENT SWITCHBOARDS FOR SMALL PLANTS.—Three-phase panels for use in small or isolated plants containing but one generator are illustrated and described in a bulletin issued by the General Electric Co., Schenectady, N. Y. These panels are not intended for the parallel operation of generators, but for installation in a switchboard, consisting of two or more panels. An accompanying bulletin is devoted to panels designed for general use in small central stations and isolated plants. They are for use with one set of bus-bars to which the generators and feeders are connected and are suited to the parallel operation of generators. Each of these bulletins contains connection and dimension diagrams of panels of various sizes.

RECORDING INSTRUMENTS.—A bulletin recently issued by the Uehling Instrument Co., Passaic, N. J., describes, in condensed form, that concern's line of recorders of various types, and the standard charts for use in connection with these instruments. This line includes recorders for pressures up to 30 pounds per square inch, calibrated in ounces and pounds, and inches of water and mercury; recorders for light pressures and vacuums, calibrated in inches of water; draft and differential draft gages, calibrated in inches of water; revolution recorders, etc. These are all operated on the hydrostatic principle, springs, levers and joint movements being entirely eliminated. This principle also permits of opening the scale between limits where readings are important, and narrowing it where they are unimportant, or eliminating entirely any part of the scale which is useless.

ELECTRIC FANS. — The Sprague Electric Works of the General Electric Co., 527-531 West Thirty-fourth street, New York City, has issued a 40-page catalog devoted to its line of electric fans of the Lundell type. In addition to the numerous styles which have been listed in previous editions of the catalog, the company is prepared this season, to furnish 12 and 16-inch, six-blade, exhaust fans, and 12-inch exhaust fan blowers for furnaces, while the 56-inch, four-blade, ceiling and column fans have been furnished with an improved brush holder. The Sprague line of fans is manufactured for alternating or direct current, and embraces a large variety, including ceiling, counter, column, desk and bracket, exhaust, floor column, midget exhaust, telephone booth, residence, ventilating and other types.

IRON AND STEEL PIPE COATING.—In a recently issued bulletin, the National Tube Co., Pittsburgh, describes and illustrates its "National" brand of coating. This is designed for application to iron and steel pipe, as a protection against external corrosion and electrolysis. The pipe, after having been cleaned and dried, is dipped, while hot, into a hot bath of special refined bituminous compound after which it is permitted to drain vertically and cool. The first operation is then succeeded by a second in which the enamel-like surface of the coating is wrapped spirally with a fabric which has been thoroughly saturated with the hot compound. The thickness of the protective coat thus obtained is about 3-64 of an inch. To meet special conditions the pipe may be provided with two or three thicknesses of the fabric. This coating can now be applied to pipe ranging in size from three to 18½ inches, external diameter, and preparations are being made to extend its use to all sizes of pipe manufactured.

SURFACING MACHINES. — The Northampton Emery Wheel Co., Leeds, Mass., has issued a bulletin devoted to its line of automatic, dust-proof, surfacing machines, designed for the rapid and accurate grinding of dies, chucks, straight edges, surface plates, typewriter parts and other work falling within the capacity of the machine table. All parts of the machine are readily accessible and particular attention is directed to the method of lubrication, this being accomplished by means of compression grease cups. All exposed parts and ways are protected by dustguards; a foot lever and clutch permit the stopping or starting of the machine table at any desired point; the grinding head and machine table are provided with both hand and automatic feed, and the vertical feed is determined by means of a dial which is graduated into thousandths of an inch. The machine may be furnished with a water attachment at a small cost, and may be fitted with a high grade magnetic chuck which may be used either wet or dry and is so designed that it is guaranteed not to burn out.

# Iron and Steel Securities

Gains in railway and industrial security prices on the New York stock exchange last week, although not pronounced, carried the general list to the highest level of the year. This improvement was accompanied by a volume of trading which exceeded the average of a normally active market.

Monday, the market was reactionary and closed lower. Tuesday, trading was dull but the market was steady and averaged higher at the close; foreign markets more cheerful. Wednesday, a number of inactive stocks advanced sharply and the list closed generally higher; foreign markets firm. Thursday, trading toward the close was accompanied by an advance which carried several prominent issues to the highest prices of the year; foreign markets firmer, although there was no improvement in the coal strike situation in Great Britain or Germany. Friday, the market opened active and buoyant and prices advanced to the highest level of the year; the final dealings were characterized by a moderate reaction; in New York, the anthracite miners rejected the proposition of the mine owners for a renewal of the old agreement; foreign markets firmer. Saturday, the market was reactionary, on sales for foreign account; strike situation remained unchanged; wheat declined, while cotton was barely steady.

Money on call ranged between 2½ and 2¼ per cent. The demand for time money was considerably heavier and lenders were disposed to adhere firmly to their terms. The actual condition of clearing house institutions showed loans decreased $7,835,000; net deposits decreased $10,474,000; total reserve $446,875,000, and the excess of reserve $16,985,900, an increase of $609,100. Non-member banks and trust companies showed loans decreased $278,100; net deposits decreased $1,262,100; reserve on deposits decreased $2,140,300, and the percentage of reserve 19.3, against 19.7 the week previous. Bank clearings showed a decrease of less than 1 per cent from the preceding week but a gain of 5.2 per cent over last year. Commercial failures numbered 279, compared with 344 the preceding week and 278 the corresponding week last year. Shares were sold to the number of 2,688,400, compared with 2,601,000 the preceding week and 1,553,600 the corresponding week a year ago. Bonds, exclusive of government bonds, were sold to the amount of $14,121,000, compared with $12,911,000 the previous week and $13,561,000 the corresponding week last year.

| | Clos'g Quo. Mar.16 | Changes in week. | Annual Meeting date 1912 | Stock Outstanding | Basis. | Dividend Last Dividend | Dividend Date Last Div. Pay |
|---|---|---|---|---|---|---|---|
| Allis-Chalmers | ¾ | + ⅛ | | $19,820,000 | | ..... | |
| Allis-Chalmers, pr | 4 | —1 | | 16,050,000 | 7 cum. | 1¾ Q. | Feb., 1904 |
| American Can | 14½ | +1⅜ | Feb. 6 | 41,233,300 | | ..... | |
| American Can, pr | 94⅝ | — ⅝ | | 41,233,300 | 7 cum. | 1¼ Q. | Apr., 1912 |
| Am. Car & Fdy | 55 | — ⅛ | June 27 | 30,000,000 | 2 | ½ Q. | Apr., 1912 |
| Am. Car & Fdy., pr | 116 | —1⅛ | | 30,000,000 | 7 n. c. | 1¾ Q. | Apr., 1912 |
| American Loc | 36½ | ..... | Oct. 15 | 25,000,000 | 5 | 1¼ Q. | Aug., 1908 |
| American Loc., pr | 106½ | +1⅛ | | 25,000,000 | 7 cum. | 1¾ Q. | Jan., 1912 |
| American Ship | 47⅝ | —2⅜ | Oct. 9 | 7,600,000 | 4 | 2 Q.** | June, 1911 |
| American Ship, pr | 102½ | + ½ | | 7,900,000 | 7 n. c. | 1¾ Q. | Jan., 1912 |
| Am. Steel Foundries | 29⅝ | — ⅛ | Mar. 21 | 17,184,000 | 5 | 1¼ Q. | May, 1911 |
| Barney & Smith | 15 | ..... | June 4 | 2,000,000 | 4 | 1 Q. | Dec., 1907 |
| Barney & Smith, pr | 85 | ..... | | 2,500,000 | 8 cum. | 2 Q. | Dec., 1911 |
| Bethlehem Steel | 30½ | + ¼ | April 2 | 14,862,000 | | ..... | |
| Bethlehem Steel, pr | 60¼ | + ⅜ | | 14,908,000 | 7 n. c. | ¾ Q. | Feb., 1907 |
| Cambria Steel | 42 | + ½ | Mar. 19 | 45,000,000* | 5 | 1¼ Q. | Feb., 1912 |
| Cambria Iron | 44¾ | — ¼ | | 8,468,000* | 4 | 2 S. A. | Apr., 1912 |
| Chicago Pneumatic Tool | 44 | —1 | Feb. 19 | 6,448,800 | 4 | 1 Q. | Jan., 1912 |
| Colorado Fuel | 26½ | +1½ | Oct. 21 | 34,235,500 | | 1¼ Q. | April, 1902 |
| Crucible Steel | 113⅛ | + ⅜ | Nov. 15 | 24,578,400 | | ..... | |
| Crucible Steel, pr | 83⅛ | + ⅞ | | 25,000,000 | 7 cum. | 1¾ Q. | Mar., 1912 |
| Empire Steel | 10 | ..... | Feb. 28 | 1,254,770 | | ..... | |
| Empire Steel, pr | 36 | ..... | | 2,500,000 | 6 cum. | 2 S. A. | July, 1911 |
| Fay & Egan | 70 | ..... | Feb. 20 | 1,000,000 | 7 | 1¾ Q. | Nov., 1908 |
| Fay & Egan, pr | 110 | ..... | | 1,000,000 | 7 cum. | 1¾ Q. | Feb., 1912 |
| General Electric | 164½ | + ½ | May 14 | 77,281,200 | 8 | 2 Q. | Apr., 1912 |
| Harbison-Walker | 40 | ..... | Jan. 15 | 18,000,000 | 2 | ½ Q. | Mar., 1912 |
| Harbison-Walker, pr | 100 | ..... | | 9,600,000 | 6 cum. | 1½ Q. | Jan., 1912 |
| International Pump | 30½ | + ⅛ | Dec. 10 | 17,762,500 | | ½ Q. | Apr., 1905 |
| International Pump, pr | 81½ | + ½ | | 11,350,000 | 6 cum. | 1½ Q. | Feb., 1912 |
| Lackawanna Steel | 30 | ..... | Mar. 13 | 34,978,000 | | ..... | |
| Lake Sup. Corp | 29 | ..... | Oct. 2 | 40,000,000 | | ..... | |
| New York Air Brake | 52¾ | +2¾ | Mar. 13 | 10,000,000 | 6 | 1½ Q. | July, 1911 |
| Niles-Bement-Pond | 95 | ..... | Feb. 7 | 8,500,000 | 6 | 1½ Q. | Mar., 1912 |
| Niles-Bement-Pond, pr | 104 | ..... | | 2,000,000 | 6 cum. | 1½ Q. | Feb., 1912 |
| Otis Elevator Co | 77 | —3 | Mar. 18 | 6,358,600 | 4 | 1 Q. | Apr., 1912 |
| Otis Elevator Co., pr | 101 | ..... | | 6,375,300 | 6 n. c. | 1½ Q. | Apr., 1912 |
| Pa. Steel | 60 | ..... | May 13 | 10,750,000 | | ..... | |
| Pa. Steel, pr | 100¼ | + ⅛ | | 20,587,500 | 7 n. c. | 3½ S. A. | Nov., 1911 |
| Pittsburgh Coal | 18⅝ | —1 | Mar. 12 | 28,104,600 | | ..... | |
| Pittsburgh Coal, pr | 79½ | —2½ | Oct. 7 | 27,071,800 | 7 cum. | 1¾ Q. | Jan., 1912 |
| Pittsburgh Steel Co., pr | 101⅞ | + ⅝ | Feb. 21 | 7,000,000 | 7 cum. | 1¾ Q. | Mar., 1912 |
| Pressed Steel Car | 33¼ | +1½ | | 12,500,000 | | 1 Q. | Aug., 1904 |
| Pressed Steel Car, pr | 101 | +1 | Nov. 13 | 12,500,000 | 7 n. c. | 1¾ Q. | Feb., 1912 |
| Pullman | 160 | + ⅜ | Mar. 7 | 120,000,000 | 8 | 2 Q. | Feb., 1912 |
| Railway Stl. Spring | 29½ | — ½ | | 13,500,000 | 2 | 1 S. A. | Oct., 1908 |
| Railway Stl. Spring, pr | 100 | —1 | Oct. 16 | 13,500,000 | 7 cum. | 1¾ Q. | Mar., 1912 |
| Rep. Iron & Steel | 20¼ | + ½ | | 27,191,000 | | ..... | |
| Rep. Iron & Steel, pr | 72⅛ | +1⅝ | Mar. 13 | 25,000,000 | 7 cum. | 1¾ Q. | Jan., 1912 |
| Sloss-Sheffield | 43½ | +2⅜ | | 10,000,000 | 5 | 1¾ Q. | Sept., 1910 |
| Sloss-Sheffield, pr | 112 | ..... | June 26 | 6,700,000 | 7 n. c. | 1¾ Q. | Apr., 1912 |
| U. S. Pipe & Fdy. Co | 14½ | + ¼ | | 12,500,000 | | 1 Q. | Dec., 1907 |
| U. S. Pipe & Fdy. Co., pr | 51¾ | ..... | April 15 | 12,500,000 | | 1¼ Q. | June, 1911 |
| U. S. Steel | 65½ | + ⅝ | | 508,302,500 | 5 | 1¼ Q. | Mar., 1912 |
| U. S. Steel, pr | 110¾ | + ½ | | 360,281,100 | 7 cum. | 1¾ Q. | Feb., 1912 |
| U. S. Steel 5s | 103 | + ⅛ | Sept. 17 | 465,189,500 | 5 | 5 Q.‡ | |
| Va. Iron, Coal & Coke | 62½ | +2½ | Oct. 1 | 9,073,680 | | ..... | Oct., 1907 |
| Westinghouse Air Brake | 162 | —1 | June 12 | 14,000,000* | | 5. † | Apr., 1912 |
| Westinghouse Electric | 75 | +1⅛ | | 3,998,700* | 7 cum. | 1¾ Q. | Jan., 1912 |

Par value of shares, $100, except those starred (*). $50.
**Includes last 1 per cent payment of 4 per cent extra.
†Stock.
‡Include 2½ regular, 1½ extra and 1 special.

### *Copper Stocks*

**New York.**—Amalgamated Copper closed 72⅛, a net gain of 1⅛.

**Boston.**—Anaconda closed 40½, a net gain of 2¾; Calumet & Arizona closed 62¼, a net gain of ¼; Calumet & Hecla closed 448, a net loss of 3; North Butte Mining closed 28¼, a net gain of ½; Quincy Mining closed 79½, a net loss of ½.

### *Financial Notes*

The Noelke-Richards Iron Works, Indianapolis, has increased its capital stock from $100,000 to $250,000.

The Thomas Steel Co., Niles, O., has reduced its capital stock from $500,000 to $10,000.

The Cambria Iron Co. has declared the regular semi-annual dividend of 2 per cent, payable April 1.

The International Harvester Co. declared the regular quarterly dividend of 1¼ per cent on its common stock.

THE IRON TRADE REVIEW

DEVOTED TO THE IRON, STEEL, MACHINERY AND FOUNDRY INDUSTRIES

Published Every Thursday by

**The Penton Publishing Company**

CLEVELAND

CHICAGO - - - - - - - - - - 1328 Monadnock Blk.
CINCINNATI - - - - - - - - - 503 Mercantile Library Bldg.
NEW YORK - - - - - - - - - - 1115 West St. Bldg.
PITTSBURGH - - - - - - - - - 2148-49 Oliver Bldg.
WASHINGTON, D. C. - - - - - - - - - Hibbs Bldg.
BIRMINGHAM, ENG. - - - - - - - - - Princes Chambers

Subscription, United States and Mexico $4.00 per year
Canada and other Foreign Countries $5.50 a year

Entered at the Postoffice at Cleveland as Second Class Matter

*Copyright 1912, by the Penton Publishing Co.*

**Cleveland, March 21, 1912**

## Shifting Pig Iron Production

From time to time, THE IRON TRADE REVIEW has presented a table showing the percentage of the country's total pig iron production contributed by different districts. The first presentation of this sort was made in our issue of March 14, 1901, and compared the percentages for 1890 and 1900. We now present a table showing the percentages for those two years, as well as for 1905 and last year.

The first question likely to be asked when comparison is made between 1911 and a time a few years earlier, is "How has the building of the Gary plant affected the situation?" The official statistics from which the accompanying percentages are compiled include Michigan with Indiana, but there was no Indiana production in 1905, and the 1.3 per cent of the total contributed by Michigan in 1905 was approximately Michigan's proportion in 1911, and as the total for the two states in 1911 is 4.9 per cent, 3.6 per cent of the country's pig iron was made in Indiana in 1911. This was by the Gary plant and one independent stack. There was a corresponding loss elsewhere, but it is not easy to locate it. Other districts gained, besides Indiana, and accordingly many lost. One wonders whether it was the Pittsburgh district which lost to Indiana. Allegheny county, which comprises almost all the Pittsburgh district, did lose, but only 1.9 per cent. The Shenango valley, near Pittsburgh, lost much more, or 2.5 per cent, but we can hardly pass that on to Indiana when we observe that the brother valley, the Mahoning, gained 2.6 per cent. The two valleys together remained stationary. There were losses in the east, but there were also gains, while in the south there were slight gains and one large loss, that of Virginia. The most reasonable conclusion is that the Indiana production was not at the expense of any particular district or districts. It merely appeared and pulled down the total of the rest of the country by the amount of its output.

The next query would probably be as to how the lake front fared. Starting at the west, Illinois showed no change. Indiana Harbor and Gary appeared, with 3.6 per cent of the country's total. The Lake counties of Ohio gained 1.0 per cent, and New York gained 1.4 per cent. Making a little allowance for the new furnace at Erie, Pa., it may be concluded that the Lake front from 1905 to 1911 made a gain of about 6.5 per cent of the country's total pig iron, making about 18.0 per cent of the total in 1905 and about 24.5 per cent in 1911. The lake front has, therefore, passed Allegheny county, but only very recently, and the honor is no great one, seeing the extent of the lake front. The promise, however, is for continuous gain in the future.

In the east, New Jersey made 1.4 per cent of the total in 1905, and only 0.2 per cent in 1911. The lower Susquehanna and the Juniata valleys lost, while the Lehigh and Schuylkill valleys gained, whereby eastern Pennsylvania practically broke even. In the south, Virginia lost heavily, while Tennessee lost a little and Alabama and Kentucky made slight gains.

The long range comparison, from 1890 to 1911, is rather interesting. Massachusetts, Connecticut, the upper Susquehanna valley, the Hocking valley and the charcoal furnaces of the Hanging Rock region practically dropped out. The disappearance of the upper Susquehanna valley was complete, and was due to one stroke, the removal of the Lackawanna company's operations from Scranton to Buffalo. This brought New York decidedly to the front.

While it is impossible to divide the country precisely into districts, some general division might be made, by taking the east, the south (including Virginia), the lake front, and the remainder of the central west. Under this general division, the distribution of pig iron production may be stated approximately as follows:

| | 1890. | 1911. |
|---|---|---|
| East | 31 | 14 |
| South | 16 | 10 |
| Lake front | 10 | 24 |
| Remainder of central west | 42 | 50 |
| Scattering | 1 | 2 |
| | 100 | 100 |

PROPORTIONATE PIG IRON PRODUCTION IN UNITED STATES BY DISTRICTS IN PER CENT.

| | 1890. | 1900. | 1905. | 1911. |
|---|---|---|---|---|
| Massachussets and Connecticut | 0.3 | 0.1 | 0.1 | 0.0 |
| New York | 3.6 | 2.1 | 5.2 | 6.6 |
| New Jersey | 1.7 | 1.2 | 1.4 | 0.2 |
| Pennsylvania | (48.0) | (46.2) | (46.0) | (41.5) |
| Lehigh Valley | 7.9 | 4.0 | 2.7 | 3.7 |
| Schuylkill Valley | 5.9 | 3.2 | 2.4 | 3.1 |
| Upper Susquehanna Valley | 2.0 | 1.0 | ... | ... |
| Lower Susquehanna Valley | 5.5 | 3.9 | 2.9 | 1.9 |
| Juniata Valley | 2.1 | 0.9 | 0.9 | 0.4 |
| Shenango Valley | 6.5 | 5.8 | 7.8 | 5.3 |
| Allegheny County | 14.5 | 22.6 | 23.5 | 21.6 |
| Miscellaneous | 3.6 | 4.7 | 5.8 | 5.5 |
| Maryland | 1.6 | 2.1 | 1.4 | 1.1 |
| Virginia | 3.2 | 3.6 | 2.2 | 1.2 |
| North Carolina, Georgia and Texas | 0.4 | 0.3 | 0.2 | 0.1 |
| Alabama | 8.9 | 8.6 | 7.0 | 7.2 |
| West Virginia | 1.4 | 1.2 | 1.3 | 1.2 |
| Kentucky | 0.5 | 0.5 | 0.3 | 0.4 |
| Tennessee | 2.9 | 2.6 | 1.6 | 1.4 |
| Ohio | (13.5) | (17.9) | (19.9) | (22.4) |
| Mahoning Valley | 5.4 | 7.3 | 7.5 | 10.1 |
| Hocking Valley | 0.9 | 0.4 | * | * |
| Lake counties | ... | 3.6 | 5.7 | 6.7 |
| Miscellaneous Bituminous | 6.0 | 4.8 | 5.2 | 4.4 |
| Hanging Rock Bituminous | 1.0 | 1.8 | 1.5 | 1.2 |
| Hanging Rock Charcoal | 0.3 | 0.1 | 0.0 | 0.0 |
| Illinois | 7.6 | 9.9 | 8.8 | 8.9 |
| Indiana and Michigan | 2.5 | 1.2 | 1.3 | 4.9 |
| Wisconsin and Minnesota | 2.4 | 1.3 | 1.5 | 1.2 |
| Mo., Colo., Ore. and Wash. | 1.3 | 1.1 | 1.8 | 1.7 |
| | 100.0 | 100.0 | 100.0 | 100.0 |

Notes:—Where the percentage is given at 0.0 it indicates merely that the production was less than one-twentieth of 1 per cent; ... indicates no production at all. The *, Production included with Lake counties.

Twenty years ago, great claims were being made for Alabama, but the figures do not show that the claims were realized. While the production in Alabama has increased, it has not kept pace with that of the remainder of the country. Alabama made 8.9 per cent of the country's pig iron in 1890, but only 7.2 per cent in 1911.

Much has been heard lately of the possible decad-

ence of the Pittsburgh district, if not in actual tonnage, at least in proportion to the country's total production. It should be observed that the loss in percentage from 1905 to 1911 was very slight, and that in 1890 Allegheny county contributed only two-thirds as large a proportion as in 1911 to the country's total production. If there is a loss, it is not from a long-established position, but only a loss of a portion of the gain made in the decade of the nineties. It must be remembered, of course, that this discussion refers only to percentages, Allegheny county having usually made great gain in tonnage, as has the country at large.

## The Interest of the Public

In his testimony before the Stanley committee of the house of representatives, First Vice President Wood, of the Pennsylvania Co., was perfectly clear as far as the direct interests of his railroad are concerned. When asked what difference it made to the public whether the Bessemer road was owned by the Pennsylvania Railroad Co., or by the Steel Corporation, he promptly replied, "No difference," but gave as his reason for his objection to private ownership of industrial lines, that "we would like to haul the business ourselves." This was a frank statement, but when pressed as to the advantage it would be to the public to confine industrial lines to the limits of the plants, he admitted that he had a rather shadowy idea that it would be to the general interest of the public to limit such lines to plant facilities. "I cannot," he said, "state the idea definitely, but there has been complaint when industries do not own their roads. This ownership is an advantage to those companies which own them."

This is undoubtedly true, but we fail to see that the interest of the public necessarily conflicts with the fact that a steel company owns a railroad or a boat. The interest of the public does, however, conflict with any discrimination on the part of any operating or owning company in favor of one shipper against another. If, for example, a steel company owns a road from the mines to the docks, it should be compelled to treat every shipper exactly as well as it does itself. Dissolution of the company—that is, separating the manufacturing plant from its railroad or its boat—would not insure any better conditions than now exist. What the country needs and demands is such government supervision and regulation as will insure justice for all concerned, regardless of ownership.

## Bewildered Editors

A remarkable statement was made in the *New York American* of March 13, when, with reference to the broken rail, in its account of the Twentieth Century Limited wreck near Poughkeepsie, N. Y., it declared: "It is said that all rails of the Lackawanna type are manufactured by the United States Steel Corporation at its Bethlehem works."

The knowledge of the steel business, which *The American* here displays, clearly entitles it to take equal position with another prominent New York daily, which recently announced with much gusto as indicating a returning prosperity that: "The Jones & Laughlin Steel Co. has started its 42-inch reversing engine." The resumption of so important an addition to active mill capacity apparently was sound evidence of wonderful revival of the industry.

Isn't it about time that the newspapers show a more intelligent appreciation of the iron and steel business of this country through their editors acquiring such knowledge of that great industry as will prevent the printing of such rubbish or else leave the field of trade news to those publications which by training and facilities make the collection of such information a science?

## False Leaders, Old and New

The high priests, elders and scribes of 1900 years ago were very much like the apostles of discontent and yellow journalists of today, for all have been more or less successful in misleading the people. Congressman Philip P. Campbell, of Kansas, in his recent letter to Col. Roosevelt, discussing the recall of judges and judicial decisions, said:

"You have overlooked one of the most important cases ever tried. Pilate acquitted the Christ. An appeal from Pilate's decision was taken to the people, and the Savior was crucified."

Colonel Roosevelt, in commenting upon the Congressman's letter, said:

"Congressman Campbell's position is in effect that the American people are as unfit for self-government and as prone to guilty excesses as the mob which demanded the crucifixion of the Savior."

If the Colonel will take down his Bible, he will find that "the *people* were persuaded by the high priests and elders", for such is the language of the gospel accounts. Nothing is said about a "mob" and the people referred to were probably as capable of reviewing a judicial decision as the average American citizen today would be. It is largely a question of leadership and false leaders sway the masses today almost as successfully as they did when they urged the recall of Pilate's decision.

## Likes the Idea

Editor THE IRON TRADE REVIEW:—

Your editorial on "Extending the Usefulness of Universities", published in THE IRON TRADE REVIEW current issue, seems to me to be a good step in the right direction.

As a young technical graduate, my school courses are still fresh enough in my mind to recall that our perpetual plaint as undergraduates was that we were not given enough *real* work to do. We did practical work, all right, and lots of it, but as soon as our mythical reports had been O. K.'d, the game was over, until the next class should come along and make out their *play its real* reports. What we ached for was a real, genuine, make-or-break problem, on which we could generate a little enthusiasm, and try out our own originality, instead of seeing how last year's men had done it.

As a further, and right-to-the-point fact, I am glad to state that right now two of the seniors at Case are working out a thesis on a brass recovery proposition which is one of the problems confronting me as assistant manager of a brazed steel tube plant.

The work is being done by the ready consent, and with the consulting help of the head of the department upon the material which we are only too glad to furnish.

I think that a little investigation would show many similar cases, and the fact, too, that the feeling of *use your undergraduates* is steadily growing.

Case, '11. D. B. FRISBIE.

# MEN OF THE IRON TRADE

**Col. H. P. Bope,** first vice president of the Carnegie Steel Co., has gone to Mexico on business.

**John A. Topping,** chairman of the Republic Iron & Steel Co., has gone to Georgia for a several weeks' visit.

**George Langton** succeeds O. A. Clarke as master mechanic of the Texas & Pacific Ry., with office at Marshall, Tex.

**C. K. Stewart** has succeeded T. M. Vickers as master mechanic of the Missouri Pacific Ry., with offices at Coffeyville, Kas.

**Dr. Paul Heroult,** the metallurgical chemist and inventor of the Heroult process for electric steel making, has sailed for Europe.

**H. H. Westinghouse,** vice president and director of Westinghouse Air Brake Co., has returned to New York from a trip to Florida.

**Oscar Lepper,** formerly with the Western Electric Co., Pittsburgh, is now connected with the Iron City Electric Co., Pittsburgh.

**Walter T. Krausch** has been appointed engineer of buildings of the Chicago, Burlington & Quincy railroad, with offices at Chicago.

**George Von Rottweiler,** who has been chief engineer and factory manager of the Falls Machine Co., Sheboygan Falls, Wis., has resigned.

**E. F. McCrea** has been appointed division engineer of the central system of the Pennsylvania lines west, with headquarters at Toledo, O.

**E. F. Mallon** has been appointed city engineer of Colorado Springs, Colo. He was formerly chief engineer of the Colorado Midland railway.

**H. P. James,** formerly with the Cutler-Hammer Mfg. Co., has become sales manager for the Crown Commercial Car Co., North Milwaukee, Wis.

**S. Percy Hooker,** Leroy, N. Y., who was chairman of the New York state highway commission, has been appointed state engineer of New Hampshire.

**E. G. Hewson** has been appointed resident engineer of the Grand Trunk railway, with offices at Toronto, Ont., succeeding C. W. Power, who resigned.

**George B. Massey,** who has been resident engineer of the Bucyrus Co., in New York, is now located in South Milwaukee, Wis., at the company's home offices.

**A. C. Mackenzie,** assistant engineer of the Canadian Pacific Ry., at Montreal, Que., has been appointed engineer of maintenance of way, with headquarters at Montreal.

**John R. Buchanan,** formerly head of the sales department of the Appleton Wire Works, Appleton, Wis., is now establishing a wire works plant near Ottawa, Can.

**James H. Herron,** Cleveland, a metallurgist formerly with Motch & Merryweather, has been elected permanent secretary of the National Machine Tool Builders' Association.

**Charles E. Warren,** an electrical engineer, has been named as a member of the public utilities board of Baltimore, Md., succeeding Lewis R. Works, who recently resigned.

**W. B. Whittemore,** formerly salesman for Crocker Bros., in the metropolitan district, will hereafter represent that firm in New England, with offices at 53 State street, Boston.

**B. Shimoda,** of the Imperial Government Railways of Japan, is in this country. He is reputed to have come for the purpose of placing orders for locomotives and railway materials.

**C. C. Owens,** who has been at the New York office of the Westinghouse Electric & Mfg. Co., for the past eight years, has been appointed district manager, with headquarters at Detroit.

**J. A. Struthers** has been appointed as designer for the Henry Mfg. Co., New York. He was formerly electrical engineer with the Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.

**Henry B. W. Sotter** has retired from the boiler manufacturing firm of Sotter Bros., Pottstown, Pa. Recently he was visited by many of his employes and presented with a silver loving cup.

**John Clark,** who has been master mechanic in the plant of James Wetherill & Co., Chester, Pa., has accepted a position as foreman machinist of the Philadelphia Steel Wire Co., Camden, N. J.

**Col. George W. Goethals,** chief engineer of the Panama canal, was recently entertained by Kaiser Wilhelm, of Germany. The colonel is inspecting a number of engineering works in Europe.

**Urban W. Frink,** formerly with the C. E. Mills Oil Co., Syracuse, N. Y., in the capacity of salesman in the New England territory, is now associated with the General Motors Co., Detroit.

**Richard L. Strobridge** has taken charge of the Cincinnati office of the Wheeler Condenser & Engineering Co., Carteret, N. J. He was formerly located at the Boston office of the company.

**George B. Pickop,** formerly master mechanic with P. & F. Corbin, New Britain, Conn., has taken a position as general superintendent of the Universal Machine Screw Co., Hartford, Conn.

**W. H. Erskine** is now division master mechanic of the Minneapolis & St. Louis railroad, in charge of the central and northern divisions. He is stationed at the Cedar Lake shops, Minneapolis.

**Harry J. Bradshaw,** for some time connected with S. F. Bowser & Co., Inc., Ft. Wayne, Ind., manufacturing oil and gasoline tanks and storage systems, is now in charge of the Detroit branch.

**J. J. Albright, C. Ledyard Blair, Warren Delano, J. G. McCullough, James Speyer, Moses Taylor and Henry Waters** have been re-elected to the board of directors of the Lackawanna Steel Co.

**A. E. Ames,** of Toronto, has been elected a director of the Sloss-Sheffield Steel & Iron Co., to fill a vacancy caused by the death of H. O. Seixas. The other directors have been re-elected.

**State Geologist Ashley,** of Tennessee, who recently presented his resignation to the state geological commission, gave up that office this week. A. H. Purdue has been elected to fill the vacancy.

**Stanley Colter,** who has been appointed sales engineer of the General Concrete Construction Co., of New York, was formerly with the contracting department of the Allis-Chalmers Co., Milwaukee, Wis.

**P. F. Smith Jr.** has been appointed superintendent of motive power of the

# MEN OF THE IRON TRADE

Pennsylvania Lines, with office at Toledo, O. He has been master mechanic of the shops of the Pennsylvania at Columbus, O.

**W. T. Clark,** formerly connected with the Fairbanks-Morse Mfg. Co., Beloit, Wis., and with the General Electric Co., is now general superintendent of equipment with the Otis Elevator Co., New York.

**Fred Henry** is now a purchasing agent of the Stone-Webster Engineering Co., the largest concern of its kind in the west, at San Francisco. The company has the contract for a $10,000,000 job at San Francisco.

**George B. Brown,** who has resigned as superintendent of the Sweet's Steel Co., Williamsport, Pa., was recently surprised by the employes of the plant and presented with a solid gold watch, chain and shaving set.

**T. E. Cannon,** formerly master mechanic of the Great Northern railroad at Superior, has been appointed general master mechanic of the lake district of that railroad. Nels Osgard succeeds him as master mechanic.

**W. S. Kinnear,** who as assistant general manager of the Michigan Central railroad constructed the Detroit river tunnel, is to become president of the United States Realty & Construction Co., New York City.

**W. R. Schmidt** has been elected president of the Clare Iron Co., of Chisholm, Mich. Edward Freeman has been chosen treasurer and F. L. Austin secretary. The company owns the Elizabeth mine on the Mesabi range.

**C. DuB. Pollock,** who has been assistant engineer of the bureau of highways, Borough of Manhattan, New York, has resigned to take up the position of chief engineer in charge of paving and sewer work in Havana, Cuba.

**T. Shuhart,** a prominent steel expert from Germany, has been looking over plants of the United States Steel Corporation at Birmingham and acquainting himself with educational conditions and municipal activities in that city.

**Albert Funk,** manager of the American Bridge Co.'s plant at Trenton, N. J., has had a large tank erected and pipes installed in order to maintain a constant supply of drinking water from the company's artesian wells. This will be offered free to the residents until the city's water supply again becomes fit to drink.

**Charles R. Hall,** for the past six years chief engineer and contracting agent for the Columbus Structural Steel Co., Columbus, O., has tendered his resignation to take effect April 1. He will accept a position with another company.

**Fred R. Parks,** who has been connected with the purchasing office of the isthmian canal commission, for the last seven years, has resigned, to take effect March 16. He will enter the commercial field immediately after that date.

**A. D. Kennedy,** for many years in the engineering department of the Southern Cotton Oil Co., is now assistant manager of the newly constructed plant of the American Machine & Manufacturing Co., at Greenville, S. C.

**S. H. Chauvenet,** president of the Eastern Pig Iron Association and general manager of the Berkshire Iron Works, Sheridan, Pa., who was recently stricken with a severe illness, is reported to be improving in a Reading hospital.

**Vincente Saucedo,** who has been chief engineer of the Monterey Water Works & Sewer Co., Monterey, Mex., and of the Monterey Railway, Light & Power Co., has resigned and will enter private practice in engineering with offices in Monterey.

**J. M. Camp,** of the Carnegie Steel Co., has been named as a member of the factory inspection committee of the Eighth International Congress of Applied Chemistry, and will have charge of the work for Ohio, West Virginia and western Pennsylvania.

**L. J. Gurnee,** of Grand Rapids, Mich., has just been appointed sales manager of the Appleton Wire Works, of Appleton, Wis. He was formerly in the paper mill business at Kalamazoo, Mich., and for several years has been associated with paper mill interests in Wisconsin.

**Charles F. Brooker** is now president of the Kenosha branch of the American Brass Co., the name under which the Chicago Brass Co., Kenosha, Wis., is now known. John A. Coe Jr. is assistant to the president; George H. Allen, manager and Clifford J. Hackett, assistant manager.

**William Wright,** of the Wright-Hall Engineering Co., Fisher building, Chicago, has been appointed consulting engineer of the Pullman Co. He is now located in the Arcade building, West Pullman, and is engaged in the introduction of efficiency methods into the shops of the Pullman Co.

**L. C. Bihler,** traffic manager for the Carnegie Steel Co., was in Baltimore recently conferring with Vice President Bush of the Baltimore Bridge Co. The plant of this company was recently taken over by the Carnegie Steel Co., and some improvements will be made there.

**C. A. Meissner, George S. Humphries, William Hunt and C. A. Wendall,** members of a committee of the United States Steel Corporation, inspected the operations of the Tennessee Coal, Iron & Railroad Co., at Birmingham, Ala., recently. The committee is on a tour of routine inspection.

**President John Helmer;** O. J. Wendlandt, vice president; C. B. Rowley, vice president; E. J. N. Donahue, secretary, and W H. Locker, treasurer of the Duluth-Cuyuna Iron Co., were recently given a reception by the Crookston stockholders of the company at the Palace hotel, Crookston, Minn.

**H. G. Kiefer** has been appointed chief metallurgist and head of the department of metallurgy, recently created at the Timken Roller Bearing Co., Canton, O. He was formerly general manager of the Detroit Edge Tool Works and later assistant metallurgist for the H. H. Franklin Mfg. Co., Syracuse, N. Y.

**Admiral Bethbeder** of the Argentine navy recently made a visit to the plant of the Bethlehem Steel Co., at South Bethlehem, Pa., where armor and guns for the two dreadnoughts completed for the Argentine government by the Fore River Shipbuilding Co. and the New York Shipbuilding Co. are being built.

**Frank Phalen,** New York; D. S. Guthrie, Cleveland; R. P. Zint, Chicago; M. E. McKee, Cincinnati; P. W. Catton, St. Louis; E. M. Barnes, Birmingham, Ala.; W. W. Hall, Pittsburgh, managers of sales for the Republic Iron & Steel Co., in the cities in which they are located, attended the regular meeting of attaches of the sales depart-

# MEN OF THE IRON TRADE

ment in the general offices at Youngstown, O., recently.

**James S. Abrams,** who formerly represented the Brylgon Steel Casting Co. and the Baldt Steel Co., of Newcastle, Del., has accepted the position of special representative in Pennsylvania and vicinity of the Nelson Valve Co., Philadelphia. He will sell the Nelson acid open hearth steel castings and will be located in Philadelphia.

**H. M. Wilson,** engineer in charge of the bureau of mines, Pittsburgh, spoke before the Up-to-Date Club, at Youngstown, O., recently on the methods of eliminating the smoke nuisance and the progress that has been made. Youngstown has taken up the question of abatement of smoke and is seeking information on the subject.

**Eugene C. Pettibone,** formerly district safety inspector for the American Steel & Wire Co., Cleveland, and now safety inspector for Pickands, Mather & Co., Cleveland, addressed the members of the Cleveland Engineering Society, recently. His paper was a discussion of appliances that have been developed by the American Steel & Wire Co.

**D. de Vries,** of Rotterdam, Holland, manager of the R. S. Stokvis & Zonen, Ltd., machine tool plant at that place, arrived in Cincinnati on March 7, to visit the machine tool plants in that city. He is making an extended trip through the United States in order to study the manufacture of machinery in the different industrial centers throughout the country.

**D. L. Wilkoff,** of the Pittsburgh Iron & Metal Co., Pittsburgh, has sold his interest in that firm and since March 1 has been connected with the Pennsylvania Iron & Steel Co., at Twenty-eighth and Smallman streets. The new company will have a large yard on the Allegheny Valley railroad, and will be equipped with the very best facilities for handling scrap of all kinds.

**Charles Wicks,** formerly secretary and manager of sales of the Garry Iron & Steel Co., Niles, O., has been made president and manager of sales. George C. Johnson, formerly assistane manager of sales, has been made secretary and H. G. Long, formerly auditor of the company, has been made treasurer. The changes follow the resignation of Samuel Siddall as vice president and treasurer.

**Joseph Davidson** will be the general superintendent of the newly constructed plant of the American Machine & Mfg. Co., Greenville, S. C. He is recognized as one of the best oil mill mechanics in the country, having been engaged in the business for 20 years. He was formerly superintendent of the Gate City mills, of the Southern Cotton Oil Co., and was later made district engineer.

**J. C. Frank,** who has been purchasing agent of the Babcock & Wilcox Co., Barberton, O., for the past 12 years, has resigned to become manager of the commercial end of the farms of O. C. Barber, near Barberton, the change having taken effect March 15. He was succeeded as purchasing agent by W. T. Shaler, who has been connected with the engineering department of the Babcock & Wilcox Co., for a number of years.

**W. J. Harvie,** chief engineer of the Syracuse Rapid Transit Co., the Utica & Mohawk Valley railway and the Oneida railway, has resigned to become connected with J. G. White & Co., consulting engineers, New York, as railway manager in the operating department. He succeeds John N. Shannahan, who recently resigned to become general manager of the Newport News & Old Point Railway & Electric Co.

**H. M. Deemer,** secretary of the Midvale Steel Co., George R. Henderson, of the Baldwin Locomotive Works, David W. Jayne, of the Barrett Mfg. Co., and L. R. Lemoine, of the United States Cast Iron Pipe & Foundry Co., all residing in Philadelphia, have recently been elected to membership in the Eighth International Congress of Applied Chemistry. The congress will hold its opening meeting at Washington, D. C., on Sept. 4.

**H. R. Setz,** who has been chief engineer of the Struthers Wells Co. of Warren, Pa., for the last two years, has just accepted the position of chief engineer with the Otto Gas Engine Works, of Philadelphia. Mr. Setz was formerly connected with several of the leading American and European gas and oil engine manufacturers. His particular attention will be directed toward the development of a complete line of Otto Diesel engines of the horizontal type.

**D. M. Philbin,** formerly general superintendent of the lake district of the Great Northern railroad, will now devote his entire time to supervising the iron ore traffic of that railroad. A new office has been created. The expected activity of the United States Steel Corporation in the remaining three years before the abrogation of the Hill ore lease has caused the railroad to place an expert official in charge of the traffic. He will be stationed at either Superior, Wis., Duluth or St. Paul, Minn.

**Frank F. Gallaher,** superintendent of the New York Ship Building Co., will take charge of the Niles, O., plant of the Knox Pressed & Welded Steel Co., of Pittsburgh, on April 1. He will be general superintendent of the plant and have charge of all the plant operations. The Knox Pressed & Welded Steel Co., besides making its patented water cooled open hearth furnace doors, frames and ports, is now ready to quote on annealing boxes, galvanizing kettles and on pressed and welded work.

**Melville W. Mix,** president of the Manufacturers' Association of Indiana and president of the Dodge Mfg. Co., Mishawaka, Ind., believes that the south will soon awaken to its possibilities along industrial and agricultural lines. "They have immense advantages in their natural resources, climate and shipping facilities," said Mr. Mix, "and when the same principles of development that have advanced other sections of the country are applied, there will be no doubt of the south's supremacy."

**George Burnham Sr.,** formerly head of the Baldwin Locomotive Works, Philadelphia, celebrated his 95th birthday anniversary, last week. He was the recipient of a number of congratulatory telegrams and attentions from his friends. Recently Mr. Burnham has been suffering from a severe cold that has confined him to his bed. His connection with the Baldwin Locomotive Works began as a clerk when he was 17 years of age and he filled various capacities until he became the head of the firm at the death of Matthias Baldwin in 1886. He retired two years ago after having served with the company for 76 years.

# OBITUARIES

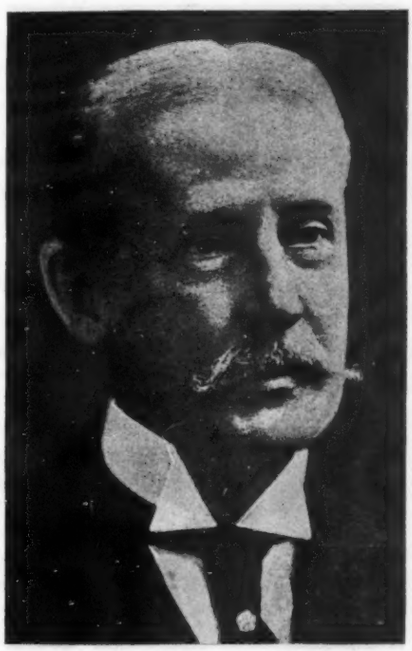
**James Harris,** president of the Janesville Barb Wire Works, Janesville, Wis., died suddenly of apoplexy, March 16. He was prominent in Wisconsin business circles and was one of the independent manufacturers.

**Benjamin Klein,** aged 66, of the firm of Klein & Cohn, Cincinnati, well known metal dealers, died in that city on March 8 from a complication of diseases. Mr. Klein had been a member of this firm for 29 years, and has been in the metal dealing business in Cincinnati for over 40 years.

**Albert Gilbert,** who established the A. Gilbert & Sons Brass Foundry in St. Louis, in 1910, died at his home, 3672 Blaine avenue, St. Louis, March 14, from heart disease. He had been ill several years. Mr. Gilbert was born in Covington, Ky., went to St. Louis in 1866, and engaged in the foundry business. He retired about three years ago.

**Rear Admiral George Wallace Melville,** who was for 16 years chief of the bureau of steam engineering of the United States navy, died at his home at Philadelphia, of paralysis, on March 17, at the age of 72 years. He was one of the most noted figures in engineering and naval circles in the world and was a most prolific writer upon engineering topics. He entered the navy department in 1861 as assistant engineer. One of his most prominent assignments was to go to the relief of the Greely expedition and his work upon this occasion will always be a conspicuous part of arctic history. No man in his profession was more honored than Melville. Since his retirement from the navy department he had engaged in general engineering practice with John H. Macalpine, in Philadelphia. He was past president of both the American Society of Mechanical Engineers and the American Society of Naval Engineers.

**John Dicey Culbertson,** vice president and treasurer of the National Tube Co., Pittsburgh, died on Wednesday night, March 13, at his home in Sewickley, Pa. after a brief illness from pneumonia. He was 67 years of age. Mr. Culbertson was born in Wheeling, W. Va., in 1845, and when 21 years old took up the iron business. He was one of the pioneers of that business in Wheeling, joining forces with the old firm of Dewey-Vance & Co., which was afterwards developed into the Riverside Iron Works. When the latter company was formed, he was made treasurer and remained in that office until the company was absorbed by the National Tube Co. In 1901, he was made vice president, secretary and treasurer of the National Tube Co., and held that office until the time of his death. Mr. Culbertson went to Pittsburgh from Wheeling in 1901, when the National Tube Co. moved its principal offices to Pittsburgh. He made his home in the pretty suburb of Sewickley, the family occupying the country seat known as the "Seven Gables". He was a director in the First National Bank of Pittsburgh, and was also a director of



JOHN D. CULBERTSON

the Electric Power & Mfg. Co., Spartansburg, South Carolina. He was a member of St. Stephen's Episcopal church, of Sewickley. His widow, Mrs. Sarah Culbertson, and two sons, John D. Jr., and T. W. Culbertson, survive him.

Mr. Culbertson is deeply mourned by a wide circle of friends and business associates, for his never-failing courtesy and kindly disposition shown to all those about him, and because of his exemplary character and business ability, which made him a power that was felt far beyond his immediate environment.

The funeral was held from the family home on Friday afternoon, and was attended by all the officials of the National Tube Co., as well as department heads, and some 200 employes of the general offices. Three of the executive officials of the company were among the pall bearers. The remains were taken to Wheeling, his former home, for interment.

**Charles T. Harvey,** who built the first canal at Sault Ste. Marie, died at the home of his son in New York City on March 13, at the advanced age of 83 years. Mr. Harvey's life was full of achievements which added greatly to the wealth and convenience of the world, but very little to his own fortune. He was born in 1829.

His first employment was with E. & T. Fairbanks & Co., scale manufacturers of St. Johnsbury, Vt., as general western agent in charge of establishing agencies for their weighing machines in the large western cities. While engaged in this pursuit he was stricken with typhoid fever and upon his convalescence his employers sent him into the upper peninsula of Michigan to recuperate.

Just at that time congress had authorized a grant of 750,000 acres of land to anyone that would build a canal around the rapids of St. Mary's river at the Sault. His mind was intensely practical and he saw at once the possibilities of wealth lying latent in the situation, as both copper and iron ore in large quantities had already been discovered in the Lake Superior country. He interested his employers in the undertaking and through their efforts a company was formed to build the canal.

Harvey, though scarcely 24 years old at the time, was placed in charge of construction and prosecuted this work with wonderful vigor. Despite all obstacles the canal was finished and opened to commerce within two years. This was a considerable achievement when it must be borne in mind that the nearest machine shop was several hundred miles away and the nearest telegraph station at Detroit, 450 miles south. As soon as the canal was finished and accepted, Harvey selected the lands in payment for the work, among them being the location upon which was afterward developed the Calumet & Hecla mine. He also engaged in pig iron manufacture in the peninsula, though this venture was not especially profitable.

He was a man of great energy and unusually successful in handling labor. In the late 60's he went to New York and planned the first elevated railroad to be operated anywhere in the world,

but from this enterprise he derived very little personal profit.

Harvey devoted his whole life to large affairs and upon the approach of his eightieth birthday was actively engaged in interesting capital in a railway to the Hudson Bay country. He was a man of very deep convictions and of an intensely religious nature. He established a Presbyterian church at the Sault, which was one of the first, if not the first, to be established in the north; and he preached and practiced total abstinence during his life. In fact, when eighty years of age he possessed more energy than most men of fifty.

## FURTHER EXTENSION

**Of Lackawanna Steel Capacity Not Acted Upon—Annual Meeting.**

No action along the line of further additions to the steel capacity of the Lackawanna Steel Co., which are in contemplation for the future, was taken in connection with the annual stockholders' meeting of the company held at Buffalo, March 13, at which 293,763 shares were represented. These contemplated improvements include additions to open-hearth ingot capacity and to other lines looking toward the eventual rounding out of the works for the use of the duplex method of steel making. The development of these improvements is dependent upon the betterment of trade conditions. As a part of this program, the company now has in construction two 60-ton open-hearth furnaces and a hot metal mixer for the open-hearth department, which were recently authorized by the directors. These additions will increase the open-hearth capacity of the company during the coming year by about 35 per cent.

President Clarke, in an address before the stockholders at the meeting, said that the volume of business was fairly satisfactory, but prices continued low. He added that he hoped for improvement whenever the present political uncertainties shall have been removed. All the retiring directors were re-elected and the officers have in turn been re-elected for the ensuing year.

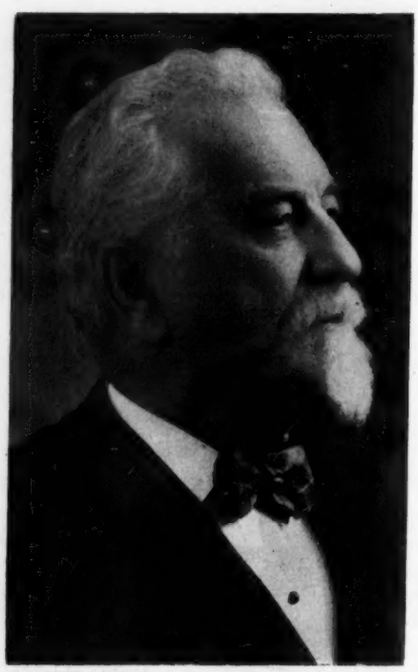
The Smythe Construction Co., Pittsburgh, has completed its work in overhauling the furnace of the Sweet's Steel Co., Williamsport, Pa. The furnace was fired last week for the first time in several months. The furnace in the open-hearth department will be repaired next and when completed manufacture of steel will be started.

## USE OF STEEL RIVETS

**Urged by D. J. Champion—American Boiler Manufacturers' Meeting.**

At the twenty-fourth annual meeting of the American Boiler Manufacturers' Association, held last week at New Orleans, the following officers were re-elected: President, Col. E. D. Meier, New York; J. D. Farasey, Cleveland, secretary; Joseph F. Wangler, St. Louis, treasurer; T. M. Rees, Pittsburgh, first vice president; J. Don Smith, Charleston, S. C., second vice president; W. A. Brunner, Philipsburg, N. J., third vice president; H. D. MacKinnon, Bay City, Mich., fourth vice president; M. H. Broderick, Muncie, Ind., fifth vice president.

The association adopted some important recommendations relative to the enactment of uniform boiler specification laws, agitation for which has been going on for some years. Suggestions were made for the improvement of the Massachusetts boiler rules, which have stood the test of practical experience longer than the laws of any other state.



CHARLES T. HARVEY

Among the interesting papers read at the four-day convention was one on "Rivets", by D. J. Champion, president of the Champion Rivet Co., of Cleveland. He emphasized the technical and practical importance of the steel rivet of the present day and its value to the modern boilermaker. He appealed to those who are still using iron as a rivet metal to give steel a trial and assured them that steel rivets would come up to their highest expectations. Rivet making, he declared was an art and the whole safety of the boiler structure depended on the rivets.

"If history repeats itself in the manufacture of steel during the next 40 years as in the past 40 years," said Mr. Champion, "it is difficult to conceive where we shall land. When we consider the improvements of steel in our present day made possible by the introduction of vanadium, nickel, chrome, manganese, etc., as alloys, we find it difficult to attempt to portray its possibilities and still be considered entirely normal. What with lap welding, acetylene welding and lock bar joining to say nothing of the celebrated Diesel engine we are led to ask what shall become of the necessity of the riveted joint; but we must pacify ourselves with the thought that we are keeping abreast with progress and can but conform to the highest development of the times in which we live."

Among other interesting papers read at the convention were the following: "Charcoal Iron Boiler Tubes", by George Thomas, Parkesburg, Pa.; "The Manufacture of Steel Tubing", by Jay J. Dunn, of the Shelby Steel Tube Co., Ellwood City, Pa.; "Segregation of Steel", by Charles L. Huston, vice president of the Lukens Iron & Steel Co.; "Modern Boiler Shops and How They Should be Equipped", by H. C. Meinholtz; "The A. B. M. A. as It is and as It Should Be", by W. H. S. Bateman, Philadelphia, and "Boiler Explosions, Their Causes and Preventions", by S. F. Jeter, of the Hartford Steam Boiler & Insurance Co.

The question of securing uniform state legislation upon boiler specifications was the most important business called before the convention. The association has waged its fight for many years to secure the enactment of such uniform laws, but it is only recently that its efforts have been meeting with much success. The suggestions or recommendations of a special committee which were adopted at the convention, were drawn up as an improvement on the Massachusetts laws, which are the most advanced of any state statutes.

The suggestion was made that the American Boiler Manufacturers' Association have five departments as a solution of the problem of preventing explosions and of discovering defects in workmanship. These departments would be those for marine boilers, water tube boilers, return tubular boilers, home heating pressure tank and locomotive builders' boiler section.

# Interstate Commerce Commission Will Issue Order

*Reducing Ore Handling Charges at Lower Lake Docks—Cases Against Individuals Will Probably be Dismissed—Will Fine Companies*

Washington, March 18.—An order will be issued in the near future by the Interstate Commerce Commission decreasing the handling charges on the lake docks. This action will be based on the ground that the rates are exorbitant. Members of the commission, who are sitting in judicial capacity, decline to indicate to what extent the rates will be reduced except to say it will be a substantial one.

For some weeks the commission has been conducting an investigation into this question based on a number of informal complaints and as the outgrowth of the indictment of the Pennsylvania, Lake Shore and Bessemer & Lake Erie railroad companies, the Ohio & Western Pennsylvania Dock Co., the Union Dock Co., Vice President McCabe, of the Pennsylvania company, Dan R. Hanna and R. L. Ireland, of the Ohio & Western Dock Co., on the charge of rebating.

The railroads, including the Bessemer & Lake Erie, the Pennsylvania Railroad Co., and Lake Shore, have leased docks to the dock companies controlled by the United States Steel Corporation and some independent concerns. The dock companies involved are the Mahoning & Shenango, Conneaut, Ohio & Western Pennsylvania, and others. The allowance of fifteen cents a ton for handling is made to the dock companies.

Another ground upon which the action of the commission will be based is that through the ownership or control of docks some of the steel companies have an unfair advantage over other steel companies. According to the information in the hands of the commission, the United States Steel Corporation and some of the larger independent companies such as the Jones & Laughlin Steel Co. and the Republic Iron & Steel Co., are on the same footing. They own or control their own docks and receive 15 cents from the steamships through the medium of their docking companies.

# Commission and Department of Justice Recommend Settlement

In the federal court at Cleveland last Saturday, a final extension of one week was granted by Judge Killits to the defendant railroad and dock companies and to the individual defendants in the government rebate and conspiracy cases. It is believed that next Saturday Judge Killitts will consent to accept the recommendation of the Interstate Commerce Commission, which is, that the indictments against the individuals be dismissed, that pleas of nolo contendere be accepted from the defendant companies, and that each defendant company be fined $20,000.

After thorough investigation, the Interstate Commerce Commission has become convinced that justice does not demand any further punishment than it has recommended to the court.

At a recent conference attended by Judge Killitts, Judge Day, who, when district attorney, worked up the rebate and conspiracy cases, District Attorney Denman and attorneys for the defendants, Judge Killitts refused to concur in the Interstate Commerce Commission's recommendation that the cases against the individuals be dismissed, but it is now understood that the department of justice at Washington has concurred in the recommendation of the commission, and it is believed that Judge Killitts will not disregard the recommendations of both the Interstate Commerce Commission and the department of justice.

---

## ADVERSE REPORT

**On the Underwood Bill—No Tariff Legislation at This Session.**

The first test of strength among members of the upper house of congress, of the Underwood bill to revise the steel schedule, was made last week in the finance committee of the senate which has been holding hearings for some weeks. The committee voted eight to six in favor of making an adverse report on the bill, and it was so reported on the floor of the senate.

The senators who voted in favor of an adverse report were Penrose, Cullom, Lodge, McCumber, Smoot, Heyburn, Gallinger and Clark, all Republicans. Those signifying their approval of the house bill were Bailey, Simmons, Stone, Williams, Kern and Johnson. Senator La Follette was absent from the meeting.

It is now apparent that no revision of the metal clause will be made at this session of congress. The so-called "progressive" senators are not altogether in sympathy with the Underwood bill, and Senator Cummins, of Iowa, will offer a substitute, which will not be as low as the house bill. It will carry reductions ranging from 30 to 40 per cent. The passage of either the Underwood or the Cummins bill, by a coalition of insurgents and Democrats, will necessitate a conference between the house and senate, with long delays.

In addition, the action of the regular Republican members of the senate finance committee is taken to mean that President Taft has reiterated his determination not to accept any tariff revision measure that places a new schedule upon articles that have not been reported upon by the tariff board.

## DECIDED DROP

### In Iron and Steel Exports—Imports Were Light.

Iron and steel exports showed a decided drop in January, the total of the tonnage lines being only 151,208 gross tons, against 190,938 tons in December, and an average of 182,000 tons per month during 1911. The value of all iron and steel exports, including that of the tonnage lines as well as of hardware, cutlery, machinery, etc., was $18,451,914 in January, against $22,186,996 in December and an average of $20,800,000 per month during 1911.

IRON AND STEEL EXPORTS, GROSS TONS.

| | January, | | Seven months, ending January, | |
|---|---|---|---|---|
| | 1911. | 1912. | 1911. | 1912. |
| Scrap | 5,116 | 7,501 | 19,102 | 39,900 |
| Pig iron | 10,798 | 8,663 | 96,474 | 62,331 |
| Billets, sheet bars, etc. | 11,731 | 12,779 | 62,430 | 111,205 |
| Wire rods | 475 | 3,271 | 9,743 | 17,427 |
| Rails | 43,127 | 24,445 | 205,675 | 216,439 |
| Steel bars | 7,649 | 10,319 | 67,278 | 70,452 |
| Iron bars | 1,194 | 861 | 9,725 | 9,017 |
| Structural | 12,152 | 13,647 | 83,859 | 132,762 |
| Hoop, band and scroll | * | 579 | * | 4,309 |
| Sh'ts and plates | 21,234 | 30,054 | 160,859 | 237,650 |
| Tin plates | 2,857 | 4,076 | 8,618 | 39,879 |
| Barb wire | 6,015 | 6,698 | 48,686 | 63,172 |
| All other wire | 9,307 | 8,888 | 55,844 | 74,919 |
| Cut nails | 916 | 593 | 5,802 | 6,699 |
| Wire nails | 4,485 | 1,989 | 26,511 | 27,587 |
| All other, including tacks | 782 | 653 | 6,487 | 7,059 |
| Pipes and fit'gs | 14,308 | 15,969 | 95,977 | 114,470 |
| Cast radiators, etc. | 216 | 223 | 2,469 | 2,767 |
| Totals | 152,362 | 151,208 | 965,539 | 1,239,144 |

*Not separately stated prior to July 1, 1911.

The changes in the principal tonnage items from December to January, in per cent, are shown below: Scrap, +88; pig iron, —21; billets, etc., —26; rails, +7; structural, —23; sheets and plates, —32; tin plates, —40; barb wire, —16; all other wire, —39; wire nails, —78; pipes and fittings, —4.

IRON AND STEEL IMPORTS, GROSS TONS.

| | January, | | Seven months ending January, | |
|---|---|---|---|---|
| | 1911. | 1912. | 1911. | 1912. |
| Scrap | 303 | 624 | 15,711 | 6,743 |
| Pig iron | 19,177 | 13,085 | 136,357 | 72,530 |
| Blooms, billets and steel n. e. s. | 2,865 | 1,392 | 25,131 | 14,597 |
| Wire rods | 2,156 | 1,760 | 11,669 | 8,425 |
| Rails | * | 208 | * | 1,814 |
| Bar iron | 2,601 | 2,055 | 18,821 | 14,588 |
| Structural | * | 352 | * | 1,948 |
| Sh'ts and plates | 292 | 265 | 2,672 | 1,476 |
| Tin plates | 5,677 | 267 | 36,097 | 2,232 |
| Totals | 33,071 | 20,008 | 246,458 | 124,353 |

*Not separately stated prior to July 1, 1911.

The declines are so general throughout the finished steel products that there is reason to suspect a common cause, the weather. This greatly impeded all iron and steel operations, as well as the freight movement, in January.

*Imports Light.*

Iron and steel imports were light in January, compared with January a year earlier, but were a trifle in excess of the average during the second half of 1911. They amounted in January, 1912, to 20,008 tons, against 33,071 tons in January, 1911, and an average of 22,000 tons per month during 1911.

IMPORTS BY MONTHS.

| | 1910. | 1911. | 1912. |
|---|---|---|---|
| January | 56,207 | 33,071 | 20,008 |
| February | 43,613 | 20,455 | ..... |
| March | 54,176 | 23,533 | ..... |
| April | 47,698 | 22,392 | ..... |
| May | 42,569 | 23,376 | ..... |
| June | 30,322 | 29,395 | ..... |
| July | 41,933 | 15,782 | ..... |
| August | 36,879 | 19,943 | ..... |
| September | 30,961 | 14,039 | ..... |
| October | 31,455 | 21,035 | ..... |
| November | 40,585 | 13,878 | ..... |
| December | 31,575 | 19,665 | ..... |
| Totals | 487,973 | 256,903 | 20,008 |

IRON ORE IMPORTS, BY MONTHS.

| | 1909. | 1910. | 1911. | 1912. |
|---|---|---|---|---|
| January | 105,233 | 284,823 | 102,600 | 154,118 |
| February | 61,749 | 170,427 | 94,820 | ..... |
| March | 108,676 | 163,633 | 134,785 | ..... |
| April | 74,782 | 206,135 | 133,900 | ..... |
| May | 97,393 | 240,833 | 217,467 | ..... |
| June | 124,714 | 193,415 | 118,296 | ..... |
| July | 172,316 | 248,810 | 200,845 | ..... |
| August | 209,855 | 282,949 | 175,183 | ..... |
| September | 164,613 | 208,892 | 184,456 | ..... |
| October | 178,051 | 219,571 | 172,459 | ..... |
| November | 174,966 | 197,833 | 128,019 | ..... |
| December | 222,609 | 173,710 | 148,902 | ..... |
| Totals | 1,694,957 | 2,591,031 | 1,811,732 | 154,118 |

IRON ORE IMPORTS BY COUNTRIES.

| | January, 1912. | Seven months. |
|---|---|---|
| Spain | 11,086 | 117,077 |
| Sweden | 36,956 | 143,665 |
| Canada | ..... | 29,778 |
| Newfoundland and Labrador | ..... | 140,443 |
| Cuba | 106,040 | 715,619 |
| Other countries | 36 | 17,400 |
| Totals | 154,118 | 1,163,982 |

*Increased Ore Imports.*

Iron ore imports in January amounted to 154,118 tons, or slightly more than in December and much more than in November, showing, indeed, an increase of 2 per cent over the monthly average of 1911. The iron ore movement is shown in detail in the accompanying tables.

## TARIFF IS UNCHANGED

### By Canadian Government—Will Not Restore Bounties For Present.

Toronto, Can., March 18.—In the house of commons, Ottawa, a few days ago, in the course of his financial statement, Hon. W. T. White, finance minister, announced that there would be no tariff changes this session and that the iron and steel bounties would not at present be restored. In view of the creation of a tariff commission it had been decided to take no action in advance of their appointment. Requests for tariff changes had been made, but there did not appear to be any need so urgent that it could not wait.

**Mill Will Resume.** — Orders have been issued for the resumption of operations on March 29, of the Skelp mill of the Carnegie Steel Co. at South Sharon. The mill has been idle for two years, and with its resumption the last idle capacity of that plant will be put into service.

The Industrial Tipple & Machine Co., of Knoxville, Tenn., is defendant in an involuntary bankruptcy petition recently brought against it in the federal court. The Fair Foundry Co., the Standard Brass & Metal Works and the Lonsdale Foundry Co., of Knoxville, and the Carlysle Johnson Machine Co., of Manchester, Conn., are among the creditors.

Arrangements have been made for the removal of a portion of the engineering force of the main office of the Trussed Concrete Steel Co., in Detroit, to Youngstown, O., occupying offices at the works of the concern in the latter city. A number of the employes have already gone there from Detroit.

VALUE OF IRON AND STEEL EXPORTS—TONNAGE AND NON-TONNAGE.

| | 1908. | 1909. | 1910. | 1911. | 1912. |
|---|---|---|---|---|---|
| January | $ 13,468,058 | $ 10,329,388 | $ 14,513,394 | $ 18,739,961 | $ 18,451,914 |
| February | 14,063,559 | 10,947,159 | 13,949,082 | 18,690,792 | ..... |
| March | 15,168,155 | 13,874,461 | 17,258,503 | 22,591,848 | ..... |
| April | 15,455,319 | 13,058,054 | 16,529,254 | 24,917,056 | ..... |
| May | 11,281,415 | 12,993,197 | 17,658,042 | 20,616,795 | ..... |
| June | 11,677,944 | 13,779,736 | 16,503,204 | 20,310,053 | ..... |
| July | 12,085,951 | 11,866,772 | 16,108,102 | 18,052,337 | ..... |
| August | 12,058,561 | 14,136,219 | 17,628,538 | 20,704,154 | ..... |
| September | 11,221,799 | 12,966,908 | 16,776,178 | 20,534,139 | ..... |
| October | 11,505,063 | 14,249,598 | 17,452,085 | 20,799,591 | ..... |
| November | 10,895,549 | 14,434,690 | 18,593,806 | 21,547,399 | ..... |
| December | 12,231,741 | 15,075,183 | 18,300,710 | 22,186,996 | ..... |
| Totals | $151,113,114 | $147,680,331 | $201,271,903 | $249,656,411 | $ 18,451,914 |

EXPORTS OF TONNAGE LINES—GROSS TONS.

| | 1908. | 1909. | 1910. | 1911. | 1912. |
|---|---|---|---|---|---|
| January | 74,353 | 70,089 | 118,652 | 152,360 | 151,208 |
| February | 81,773 | 84,860 | 110,224 | 150,919 | ..... |
| March | 96,681 | 94,522 | 124,980 | 215,888 | ..... |
| April | 93,285 | 100,904 | 117,921 | 228,114 | ..... |
| May | 64,041 | 109,977 | 135,306 | 178,428 | ..... |
| June | 69,770 | 114,724 | 120,601 | 174,248 | ..... |
| July | 86,796 | 100,680 | 128,216 | 162,929 | ..... |
| August | 86,244 | 105,694 | 131,391 | 177,930 | ..... |
| September | 76,732 | 97,392 | 119,155 | 181,086 | ..... |
| October | 85,766 | 110,821 | 129,828 | 186,234 | ..... |
| November | 71,130 | 115,943 | 155,138 | 187,541 | ..... |
| December | 77,659 | 137,688 | 150,102 | 190,938 | ..... |
| Totals | 964,242 | 1,243,467 | 1,537,943 | 2,187,809 | 151,208 |

## FLOODING OF MINES

**Was Factor in Causing Sloss-Sheffield Deficit.**

The Sloss-Sheffield Steel & Iron Co. has issued its report for the fiscal year ended Nov. 30 last, which, compared with the previous year, follows:

| | 1911. | Decrease. |
|---|---|---|
| Gross earnings | $4,521,366 | $498,817 |
| Oper. taxes and maint. | 3,789,632 | 211,982 |
| Net earnings | $ 731,758 | $286,835 |
| Fixed charges | 210,000 | ..... |
| Balance | $ 521,758 | $286,835 |
| Depreciation | 117,110 | 19,961 |
| Bal for divs. | $ 404,648 | $266,874 |
| Preferred dividend | 469,000 | ..... |
| Deficit | $ 64,352 | *$266,874 |
| Common dividend | ..... | 375,000 |
| Final deficit | $ 64,352 | $108,126 |
| Previous surplus | 3,107,044 | 172,478 |
| Total surplus | $3,042,692 | $ 64,352 |

*Denotes increase.

The foregoing balance available for dividends is equal to 6.04 per cent on the $6,700,000 outstanding common stock, as compared with 10.02 per cent in the year previous. In that period, the surplus over 7 per cent dividends on the preferred stock was equal to 2.02 on the $10,000,000 outstanding common stock, as compared with 6.58 per cent in 1909.

Following are the details of the company's earnings for the fiscal year ended Nov. 30 last, in comparison with the previous year:

| | | Decrease. |
|---|---|---|
| Profit on pig iron shipped. | $284,350 | $190,057 |
| Profit on coal | 79,469 | 33,721 |
| Profit on coke | 122,151 | 37,250 |
| Rents, royalties, etc. | 228,816 | 9,787 |
| Div. on treasury stock | 13,685 | 13,685 |
| Int. and exchange | ..... | 34,975 |
| Total receipts | $733,510 | $267,492 |
| Deductions—Gen. exps. | 30,648 | 21,545 |
| Taxes and licenses | 68,249 | 37 |
| Int. and exchange | 19,964 | * 19,964 |
| Total deductions | $118,861 | $ 618 |
| Balance net | $614,649 | $266,874 |
| Bond interest | 210,000 | ..... |
| Balance for divs. | $406,649 | $266,874 |

*Denotes increase.

The assets totaled $24,656,823, a decrease of $84,993. The profit and loss surplus was $3,042,693, a decrease of $64,351.

The report, in part, says:

This depression in the iron trade, following the misfortune which overtook the company in the flooding of its principal ore mines, as stated in the last annual report, caused the result of business during the year to be very unsatisfactory. The large amount of iron piled on the furnace yards, which has been produced at a cost far in excess of the cost of the past six months, owing to our having been forced to use inferior ore, most of which was bought from other companies at full prices, prevented our meeting the iron market, as we would have done had the cost of our accumulated iron been anywhere near normal. A marked reduction in the cost of iron was made by your company in 1911, compared with the previous year, as predicted in the last annual report, but the delivered price showed a greater decline in the year than the decrease in the cost of production. Had we obtained the same average price for iron in the past year as in the previous year, as low as that average was, we could have shown the dividend earned on the common stock of the company. The year opened, however, with quotation of iron showing a market decline from the previous year's average, and for several months these prices were pretty well maintained, and it was hoped that bottom prices had been reached, but another decline in prices set in, and lower prices were made during the balance of the year than had been seen, which carried the quotation down $1 to $1.50 per ton further, and brought the average selling price for last year below that of any year, certainly since 1903. The fiscal year closed with the market at about the lowest price, but since then, there has been some improvement in both demand and price, and if the tinkering with the tariff does not again upset the business of the country, it would seem that we may hope for a more prosperous year. The tonnage of iron on our furnace yards has been increased considerably during the year and we were unable to free the company from the floating debt—from which it had been entirely free for a number of years—which was contracted the previous year. Owing to these adverse conditions, after deducting the 7 per cent dividend on the preferred stock, all depreciations, etc., and charging to cost a considerable amount expended at the mines and furnaces, a deficit in earnings for the year is shown of $64,351.

During the fiscal year there was an average of 50 per cent of your furnaces in blast, as against an average of 60 per cent during 1910, yet there was a decrease of only about 10,000 tons in the make of iron.

The cost of iron was still further reduced by $1.50 per ton during the year.

## Excessive Carbon Caused New Haven Wreck

*In view of the assertion of rail makers, as summarized by President James A. Farrell, of the United States Steel Corporation, recently at Washington, that the railroads have increased the carbon in their rails so much that they are now within the danger zone of brittleness, the experience of the New York, New Haven & Hartford railroad, as stated in its official report upon the recent Leete's Island wreck, is interesting. It was reported at the time of the wreck that the extreme cold of the night of the wreck, causing sudden contraction of the rail at a weak spot, resulted in the break and the disaster. The railroad officials have made various tests with the broken rail and with rails out of a large consignment and of a similar quality stored at Cedar Hill for track repairs. They have found that there was too much carbon in the steel, rendering it brittle and readily subject to breakage by extreme changes in the temperature. The result was that the consignment of rails at the Cedar Hill yards has been condemned and all such rails which have been laid will be at once thoroughly inspected and removed as fast as possible.*

## APOLLO CO. ORGANIZES

**With Capital of $300,000 to Manufacture Steel Sheets.**

The new Apollo Steel Co., of Apollo, Pa., has been organized with a capital of $300,000, with the following directors: Robert Locke, A. M. Oppenheimer, Oscar W. Oppenheimer, J. E. Gallagher, W. J. Guthrie, J. H. Jackson and Charles P. Wolfe. Robert Locke is president and general manager, A. M. Oppenheimer vice president, and Charles P. Wolfe secretary and treasurer.

The company has applied for a Pennsylvania charter. Of the $300,000 capital, $225,000 was offered for sale, and it is stated was over-subscribed. The officials of the company announce that they will at once begin construction on a plant at Apollo, with six mills for the manufacture of steel sheets. A site of nine acres has been donated by the citizens of Apollo. About 500 men will be employed by the plant.

## Foundrymen Meet Sept. 23

The date of the foundrymen's convention at Buffalo finally has been set for the week of Sept. 23. All of the various allied associations will meet in Buffalo at this time, including the American Foundrymen's Association, the American Brass Founders' Association and the Associated Foundry Foremen. The usual exhibit will be held under the auspices of the Foundry & Machine Exhibition Co., and the equipment and supplies will be displayed in a large exhibition building which is now undergoing extensive repairs. Heretofore these conventions have been held in May or June, but owing to the fact that the exhibition building is undergoing repairs which could not possibly be completed before midsummer, it was decided to postpone the meeting until September.

# Late Opening of Navigation On Lakes Expected

*Unprecedented Ice Conditions—Eight Hour Day for Underground Employes—News Notes from the Lake Superior Ranges*

The prospect of an unusually late opening of the navigation season is occasioning some worry to railroad, shipping and mining interests. The lower lakes are said to be frozen over for the first time in years, while the Soo canal is frozen to the bottom. Lake Superior is almost a solid mass of ice and vesselmen fear that it will be late before the ice is cleared away from the canal and the upper and lower lakes.

The officials of the Great Northern railroad are particularly interested in the expected late opening of navigation. It is expected that 30 per cent of the ore shipped down the Great Lakes this season will go from the Great Northern docks at Superior, Wis. The United States Steel Corporation is expected to ship heavily from the Hill properties this year, while there will be a general increase in the shipments from the Lake Superior district.

"If navigation does not open until May 15," said one Great Northern official recently, "we will experience a rush that we have never had before. We will be ready to ship ore by April 1, and it is going to be a rush within a rush to get the ore down the lakes before the freezing starts again."

M. F. Chalk, government inspector of marine boilers at Duluth, believes that it may be June before many boats will be moving on the great lakes. "It is going to take a long time to get rid of the ice," he said. "As a matter of fact, more ice is being made every day and this condition will prevail until April 1."

All of the mining companies operating iron properties in the Lake Superior district have adopted the eight-hour work day plan, beginning last week, for their underground employes. The reduction from a ten-hour to an eight-hour day was made voluntarily by the companies and carries with it no decrease in pay.

Men employed on the surface will continue working the same hours, the change affecting miners, drillers, trammers and all others employed underground. While the change is general throughout the district, it is said that the open pit mines in the Mesabi district will continue to work ten hours, but all properties where the work is done through shafts, are affected.

It is believed that the change will result in the employment of more miners.

The Hawkins mine on the Mesabi range, a property of the Wisconsin Steel Co., is one of the first of the open pit mines to resume operations this season. The ore will be treated at the newly erected washing plant at O'Brien lake. This plant is said to have cost $750,000 and is on the same plan as the big washery of the United States Steel Corporation in the Coleraine district. The capacity of the plant is 2,000 tons of crude ore a day. The water utilized is forced through a 16-inch main into a 2,000-gallon steel tank, mounted on a steel tower, 124 feet in height.

The Crosby mine, the only Mesabi range property of the Cleveland Cliffs Iron Co., which shipped only 18,349 tons last year against 159,569 tons in 1910, will be more extensively worked this season. It is an open pit mine.

The Mississippi mine of the United States Steel Corporation, located on the Hill ore lands, has been worked actively throughout the winter and a stock pile of 135,000 tons has been accumulated.

The Cuyuna-Duluth Co. has taken an option on the lease on the Ironton townsite mine, Cuyuna range, held by John Helmer and A. G. Osman. Some work has already been done on the property.

The Wisconsin Mining Co. has been organized at Iron River, Mich., with a capital stock of $100,000, to secure properties on the Menominee range and conduct exploratory work. The officers of the company are: President, James Long; A. T. Wooster, vice president; J. B. Weimer, secretary, and Frank Singler, treaserer. With James Pardee, they comprise the board of drectors. Some land has been secured adjoining the James mine on the northwest, and drilling will be started.

M. A. Hanna & Co. have installed a drying house for ore at the Brunt mine near Mountain Iron, Minn., which is the first of its kind on the Mesabi range. The process is now in operation and has worked satisfactorily.

Operations on the plant of the Minnesota Steel Co., now under construction at Duluth, have been pushed forward rapidly within the past few weeks. Further men were taken on by the American Bridge Co. and a large part of the superstructure is already in place. The uprights are now in place upon both the open hearth furnaces and on the plate and rail mill sites. Work is being rushed on the blast furnaces.

The opening of warmer weather has caused a wide expansion of mining activities on the Cuyuna range, which made its first shipment last year. The Rogers-Brown Ore Co. has purchased 22 lots in Crosby, Minn., to house its employes. The Cuyuna-Duluth Co. is now down 320 feet in its tenth hole on the Federal property. Ore is said to have been encountered at 125 feet and the drill is still in the ore body. The Cuyuna-Mille Lacs shaft is reported to have been sunk 60 feet, encountering ore at 51 feet. The Iron Mountain Mining Co. reports that its drill entered ore at 62 feet and is still in the body at a depth of 273 feet. The company now has the machinery in place and a gang at work sinking a shaft.

## RECEIVER NAMED

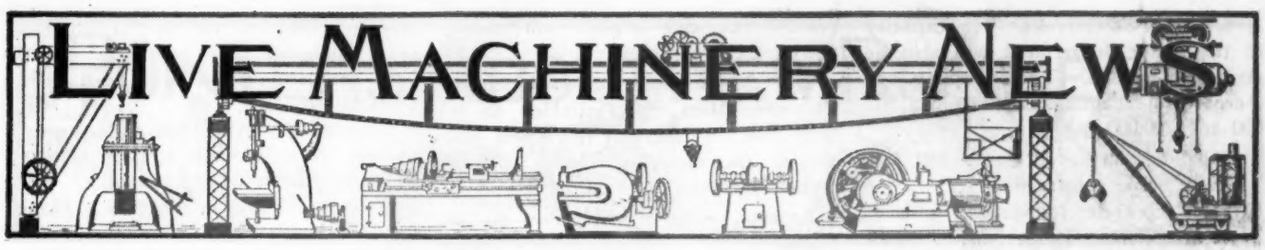
**For the Dayton Globe Iron Works Co., of Dayton, O.**

Acting upon a petition filed by R. R. Dickey, George L. Marshall of the firm of Graves & Marshall, Dayton, O., has been appointed receiver for the Dayton Globe Iron Works Co. Mr. Dickey, former president of the organization, claims to be surety on its note for $40,000, and says the company owes debts in excess of $90,000, which it is unable to pay. With an additional bonded indebtedness of $75,000, it is claimed creditors, bondholders and stockholders would lose heavily unless a receivership was allowed. The company is capitalized at $200,000 and is engaged in the manufacture of turbine water wheels and hydraulic machinery. Accompanying the petition filed by Mr. Dickey was an answer by the company, agreeing to the naming of a receiver.

---

The Nebo Consolidated Coal & Coke Co., Madisonville, Ky., will improve its mines and install considerable new machinery. R. B. Winkler is superintendent of the company, which was recently reorganized by the election of Maxwell S. Barker, to the presidency.

# LIVE MACHINERY NEWS



*In New York, no new inquiries of importance have developed during the past week, but the general tone underlying the machinery market has improved considerably. The demand for out-of-door apparatus is gaining in volume with the approach of spring. In Pittsburgh, a fair volume of small orders is being taken, but there is a scarcity of important business. In Cleveland, the city will advertise for bids about April 15 for a large amount of power plant equipment for the proposed new municipal electric lighting plant. A considerable quantity of foundry machinery and equipment has recently been purchased in that market. In Chicago, some large machine tool lists have recently been distributed by railroads; chief of these is the list for the Winnipeg shops of the Canadian Pacific. There has been a general improvement in the machine tool market in Chicago and the west.*

## Machine Tools

The Canadian Northern railroad, Winnipeg, Man., has issued a list covering its 1912 requirements of machine tools, on which bids are to be considered in the near future. The approximate cost of these tools will be $35,000. This list is as follows:

One 80-inch drive wheel lathe, complete with 220-volt direct current motor and controller.
One 42-inch double head upright boring mill for boring tires.
One hollow spindle turret lathe, capable of taking bars up to 6 inches diameter.
One 24-inch upright shaper.
One 14-inch upright slotting machine.
One hollow spindle turret lathe, capable of taking bars up to 2⅛ inches diameter.
One 18-inch brass turret lathe.
One 20-inch brass turret lathe.
One 20-inch sensitive drill press.
One 36-inch back geared drill press.
One 8-inch pipe threading and cutting machine.
One 2-inch double head bolt cutter.
One 1½-inch triple head bolt cutter.
One 48-inch blast fan for supplying air to oil furnace.
One motor driven air compressor, capacity 1,000 cubic feet free air per minute, compressed to 115 pounds.
One Lassiter automatic stay bolt drilling machine.
One roller type tube welding machine.
One 1-inch, 6 spindle, semi-automatic nut tapping machine.
One 24-inch planer.
One 8-roll patent triple cylinder sandpapering machine.
One scroll sawing machine.
One 4-spindle Universal boring machine.
One Universal dado and saw machine.
One rod, dowel and pin machine.
One bandsaw with 36-inch wheels.
One concentric slide wood turning lathe.
One 2½-inch double bitted surface planer.
One 6-spindle vertical stay bolt threader.
One No. 8 Beaudry Champion power hammer.
One No. 3 washer cutting machine.
One 36-inch Bullard vertical turret lathe.
One 24-inch by 36-inch by 14-foot gas engine lathe.
Two 24-inch column shapers.
Two 36-inch back geared upright drill presses.

## New Construction

Structural steel workers have begun work on the new boiler plant of the McNaull Co., Front street, Toledo, O.

The Missouri Malleable Iron Co., St. Louis, will rebuild two buildings of the plant which were destroyed by fire on Feb. 28.

The Buckeye Aluminum Co., Wooster, O., has awarded a contract for the erection of a one-story brick foundry to William Long, of Wooster.

D. A. Burwell is considering the establishment of a foundry at Stovall, N. C., and will be in the market for machinery in the near future.

The Lima Locomotive & Machine Co., Lima, O., advises regarding its proposed new plant that the matter of building has not yet been definitely settled.

The United States Aluminum Co., 99 John street, New York, has completed negotiations for a new factory building to be erected at New Kensington, Pa.

The Elkton Machine Works, recently incorporated with N. P. Blankenship, Elkton, Ky., as manager, is preparing to erect a building and will soon be in the market for machinery.

Contracts are being awarded for a two-story, steel and galvanized tank house for the Aluminum Co. of America, to be 60 x 250 feet. It will be aded to the plant at New Kensington, Pa.

The Ohio Steel Foundries Co., Lima, O., is preparing to build a new pattern storage house, 50 x 120 feet, of steel and rib-truss construction. McLaughlin & Hulsken, Lima, are the architects.

The Kittanning & Leechburg Traction Co., Kittanning, Pa., has broken ground for a new car house and repair shop, to be built at once. The equipment for the shop has not yet been ordered.

The Geometric Tool Co., New Haven, Conn., advises that it is erecting an addition to its plant, 50 x 182 feet, part three stories and part two. The company is not prepared to make a statement concerning the new machinery and other equipment.

The Sterling Mfg. Co., 240 Byrne building, Los Angeles, Cal., advises that it contemplates the erection of a factory some place in southern California, but nothing has as yet been decided. The company will manufacture oil cans.

The Detroit Architectural Iron Works, Detroit, has leased a factory building 50 feet x 150 feet with office building and a railroad siding, and has moved from its former quarters, it having been necesary to secure more space.

Ground is to be broken shortly for new buildings for the conduit plant, at Struthers, O., of the Western Conduit Co., a subsidiary of the Youngstown Sheet & Tube Co. L. J. Campbell, of Youngstown, O., is head of the new company.

Bids are being asked by the William Cramp's Sons Ship & Engine Building Co., Philadelphia, on a new shop building. Specifications are now out in the New York trade for cranes and other equipment supposed to represent the requirements of the new shop.

The Sherman Machine & Iron Works Co., Oklahoma City, Okla., will begin work within three months on a $200,000 warehouse in that city. The company's present foundry and machine shop will be moved to make room for the new structure, which will be six stories high and of fireproofed construction. It will have over 200,000 feet of storage capacty.

The Standard Underground Cable Co. will award contracts in a few days for a two-story and basement addition to its Pittsburgh plant. The building will be 40 x 100 feet and is to be used as a machine shop for the manufacturing of terminals and junction boxes, used in connection with underground cables. The new department will be equipped with special machinery.

The Walsh & Weidner Boiler Co., Chattanooga, Tenn., has announced plans for the construction of an addition, 90 x 150 feet, of steel construction, to be used chiefly for the con-

struction of steel tanks. The capacity of the boiler department will also be largely increased. The company has increased its capitalization from $150,000 to $200,000.

A building to be 50 feet x 150 feet, of mill brick construction with a reinforced concrete foundation, is being erected at Benton Harbor, Mich., on the Development Co.'s land west of the malleable foundry plant. The building is to be the home of the Crary Machine Co., Chicago, which the Development Co. acquired a few weeks ago, and is to be completed by April 15. The plant will be moved from Chicago by May 1 and work started in Benton Harbor.

The Ferro Machine & Foundry Co., Cleveland, has let a contract for construction of a one-story and basement addition to its gray iron foundry. The building will be so constructed as to admit of the future construction of three additional stories, each to contain 25,000 square feet of floor space. The company will require the usual foundry equipment, with the exception of a blower and cupola, since the melting capacity of the present foundry is sufficiently great to provide for the addition.

The old factory of the Chicago Railway Equipment Co., on West avenue, Jersey City, N. J., has been bought by Reed Chillingworth, of Nuremberg, Germany. Albert B. Ashford, 10 East Thirty-third street, New York, negotiated the purchase. The entire equipment of the plant is included in the transfer. A new type of differential gear casing, for use on automobiles, will be manufactured. The present plant will be increased in size, adjoining property having been acquired for that purpose. It will contain a considerable amount of special machinery to be brought from Germany.

## Power Plant Equipment

The city of Casselton, N. D., is in the market for a 25-horsepower gas engine and generator.

The Martinsburg Light & Power Co. is preparing plans for a one-story, brick, electric light plant. A. J. Shirk, Beavertown, Snyder county, Pa., is in charge of the details.

The Campobello Oil Co., Campobello, S. C., is in the market for power equipment, including a Corliss engine and two boilers. Used machinery will be considered.

The Capitol Laundry, Louisville, will spend $10,000 for the purchase of equipment, including a boiler, with which to replace the machinery destroyed recently by fire.

Corydon, Ky., is considering a plan to issue bonds amounting to $15,000 for the purpose of erecting an electric light plant. The city council will shortly act on the proposition.

The electric light commissioners of Chicopee, Mass., have decided to install four turbines and three new boilers in the municipal electric lighting plant. Estimated cost is $96,000.

Argenta, Ark., contemplates the installation of a 50-horsepower engine, direct-connected to a 300-kilowatt, three-phase alternator, in the municipal electric light and power plant.

South Bend, Ind., is asking for bids for three 5,000,000-gallon pumps and three 300-horsepower boilers to be installed in the municipal water plant. Burns & McDonald, Kansas City, are the engineers.

The Kaw Valley Drainage district, Kansas City, Kan., is in the market for two 100-horsepower locomotive type boilers and two direct-connected, 18-inch, side suction, centrifugal pumps.

Clark S. Smith, major engineering corps, who is in charge of the Mississippi river commission's offices at Memphis, Tenn., will receive proposals on turbines, pumps, boilers and electrical apparatus until March 26.

The city water commission of Sheboygan, Wis., will purchase two 250-horsepower boilers at a cost of approximately $3,500 each. The purchase of a new pump for the power house is also under consideration.

The Auglaize Power Co., Delphos, O., has completed plans for a 5,000-horsepower, hydro-electric plant to be erected about nine miles from that city. The plant will cost about $500,000 and will be ready for operation in November.

J. A. Rose, of the Greenville Water & Light Co., Greenville, Ky., is planning the erection of a power station near that city for the purpose of supplying current to coal mines. It is also intended to operate a traction line from Greenville to Central City, Ky.

Power equipment and electrical machinery will be required by the University of the South Sewanee, Tenn., which has let a contract for the erection of a new science building. The structure and its equipment will cost $150,000. Address the dean of the engineering school.

Plans are being made for the erection of a hydro-electric plant on Dix river, near Harrodsburg, Ky. Surveys have been made and preliminary plans for the dam are being drawn. Arthur Geisel is the engineer in charge. The names of those financing the venture have not been announced.

W. L. Walters, president of the Fort Branch Water, Light, Heat & Power Co., Fort Branch, Ind., announces that this company will soon arrange contracts for the installation of a combined water and light plant. The details have not yet been fully worked out.

Edmund H. Anderson is to erect an electric light plant and ice factory at Crab Orchard Springs, Ky. His address is Nicholasville, Ky. Plans are also under consideration for the construction of a steam heating plant in connection with the electric central station.

The Great Falls Power Co., Rock Island, Tenn., which has been acquiring property rights along the Caney Fork for several years, is about ready to begin the construction of its proposed hydro-electric plant. A concrete dam 80 feet high will be erected. Fielding H. Yost is in charge of the work.

A. W. Lee, A. J. Musser and J. W. Wrigley, all of Clearfield, Pa., have incorporated the Milesburg Electric Co., the Howard Electric Co. and the Unionville Electric Co. to operate light and power plants in towns of those names in Centre county, Pa. Each company has a nominal capital of $5,000.

A syndicate represented by L. B. Harrington, of Richmond, Ky., is understood to have practically completed arrangements for building a dam across the Dix river, 25 miles south of Lexington, and the construction of a hydro-electric power plant. It is estimated that an investment of $1,500,000 will be necessary.

The Pacific Gas & Electric Co. will erect a new steam turbine plant on the western bank of the Sacramento river, Sacramento, Cal., at a total cost of $744,000. The plant will include turbines of 12,500 kilowatts aggregate capacity, 6,825 - horsepower boilers and seven 1,500-kilowatt transformers, together with condenser, oil fuel tank and auxiliary equipment.

## Government News

Bids were opened by the bureau of supplies and accounts, navy department, March 12, for furnishing materials and supplies, to be delivered at various naval stations, in accordance with the schedules and classes enumerated, as follows:

Schedule 4348, class 48, Mare Island, two pumps, oil, horizontal, duplex: Blake & Knowles Steam Pump Works, New York, $1,090 and $945; Gardner Governor Co., Quincy, Ill., $725; National Electric Supply Co., Washington, $775; Platt Iron Works, Dayton, O., $912.50; Warren Steam Pump Co., New York, $675.

Schedule 4356, class 111, Brooklyn, 10 motors, 25 horsepower, complete: Diehl Mfg. Co., Elizabethport, N. J., $804 and $740; General Electric Co., Schenectady, N. Y., $7,415 (total).

Schedule 4357, class 112, Philadelphia, standard, portable, industrial railway track and six cars, standard platform: Atlas Car & Mfg. Co., Cleveland; Fairbanks Co., Washington, $1,068; Orenstein-Arthur-Koppel Co., New York, $599; Ernest Weiner Co., New York, $567.50.

## New Buyers

(In order to assist the post office in delivering letters to new concerns, it is suggested that the names of incorporators be written in the lower left hand part of every envelope addressed to such new companies.)

The following manufacturing companies have filed articles of incorporation:

Pehle Metal Products Co., Kansas City, Mo.; $25,000; by F. W. McMillan, B. Howard Smith, W. W. Pehle and others.

Kansas City Metal Products Co., Kansas City, Mo.; $10,000; by A. F. Brocker, H. J. Olney, F. E. Loveland and others.

Knight Mfg. Co., Lancaster, Pa.; $10,000; to manufacture machinery, structural iron and steel, etc.; by Mary J. Knight, Paul Heineck, Amos R. Tschudy, all of Lancaster, Pa.

The Verdin, Kappes & Verdin Co., Cincinnati; sheet metal working machinery; $25,000; W. H. Kappes, I. T. Verdin, H. A. Bolsinger, Eugene Adler, John Bolsinger.

Scranton Silk Machine Co., Allentown, Pa.; $25,000; to manufacture textile machinery of iron and steel; by Thomas Lewis, Leo E. Schimpff, Scranton, Pa.; John A. McCollon, Allentown, Pa.

The Cleveland Automatic Clock Co., Cleveland; $250,000; to manufacture automatic clocks and automatic lighting devices; by H. P. Shupe, C. A. Bond, F. L. Fuller, R. G. Floyd and M. R. Brailey.

The Clifton, Pratt Co., Cincinnati: $10,000; to manufacture pumps, vacuum cleaners and other machinery and supplies; by A. E. Clifton, Charles R. Pratt, A. H. Evans, Edward S. Macneale and Guy W. Mallon.

Jasper Bayne Co., New York City; $25,000; to manufacture and deal in railway building and contractors' supplies; by Arthur Van Vetchen, Jasper Bayne, 12 Gold street; Owen E. Abraham, 52 Broadway, all of New York City.

Fairchild Electric Vehicle Co., Brooklyn, N. Y.; $50,000; to manufacture motor vehicles; by Frank K. Fairchild, 702 Fulton street; Marcus D. Fairchild, 158 Reid avenue; Arthur E. King, 255 New York avenue, all of Brooklyn.

Brooklyn Mill Supply Co., Brooklyn, N. Y.; $10,000; to manufacture and deal in mill supplies, ship stores, etc.; by William M. Mills, 53 South street; Nathan N. Sanders, 197 Stanton street; Robert W. Thompson Jr., 52 Wall street, all of New York City.

## General Industrial

The Gardner Wire Co., Chicago, has increased its capital stock from $2,500 to $10,000.

The Smith & Baldridge Machine Co., Detroit, has changed its name to the Baldridge Gear Co.

The Advance Stove Works, Evansville, Ind., has increased its capital stock from $70,000 to $100,000.

The Ingalls-Shepard Forging Co., Harvey, Ill., has increased its capital stock from $120,000 to $200,000.

The Renfro Speed-O-Meter Co., Detroit, Mich., has increased its capital stock from $50,000 to $75,000.

The Portsmouth Steel Co., Portsmouth, O., has increased its capital stock from $1,000,000 to $3,000,000.

The Columbian Iron Works, Chattanooga, Tenn., has increased its capital stock from $125,000 to $300,000.

The Bowmanville Foundry Co., Bowmanville, Ont., has increased its capital stock from $40,000 to $100,000.

The Loew Mfg. Co., Cleveland, has increased its capital stock from $75,000 to $400,000.

The Noelke-Richards Iron Works, Indianapolis, Ind., has increased its capital stock from $100,000 to $250,000.

The Illinois Metal Refining Co., whose plant is located at Rockdale, Ill., has increased its capital stock from $50,000 to $100,000.

The Aluminum Goods Co. of America is now operating its new plant at Manitowoc, Wis., and the old works will be dismantled.

An increase in its capital from $100,000 to $400,000 has been made by the Duplex Motor Plow Co., Chicago.

An amended certificate has been filed with the secretary of state of New Jersey by the Commonwealth Steel Co., increasing its capital stock by $500,000 to $2,000,000.

The Norwalk Iron & Brass Co., Norwalk, O., has changed its name to the Norwalk Foundry Co., and increased its capital stock from $10,000 to $25,000.

Governor Tener, of Pennsylvania, has extended the charter of the Ajax Engine works of Erie county for 25 years. The works was chartered Feb. 23, 1892.

The Western Tool & Forge Co., Brackenridge, Pa., has increased its indebtedness from $100,000 to $168,000. Its capital has been increased from $500,000 to $700,000.

The Syracuse Stove Works, Syracuse, N. Y., has filed a petition in bankruptcy, its liabilities being scheduled at $119,730 and its assets at $132,620.

The Kearney & Trecker Co., Milwaukee, advises that the Milwaukee Milling Machine Co., which it owns and controls, will not do any business requiring buildings or equipment.

The foundry of the West Allis Malleable Iron & Chain Belt Co., West Allis, Wis., which was damaged by fire on Dec. 26, has been completely repaired and is in first class shape again.

The Birdsell Mfg. Co., manufacturer of agricultural implements, incorporated under the laws of Indiana, has been authorized to do business in Ontario with head office in Toronto on a capital not exceeding $40,000.

The Whitaker-Glesner Co.'s Martins Ferry, O., plant is being improved by changes in the power equipment of the mill, the addition of new shafting, and alterations to engines. The plant has been temporarily down pending these changes.

The New Process Steel Co., Marshall, Mich., has been dissolved, and the Detroit Trust Co. has been appointed permanent receiver. A Pittsburgh concern and the Ford Automobile Co., of Detroit, are reported to be prospective buyers.

The Detroit Seamless Steel Tubes Co., Detroit, whose plant was recently damaged by fire, advises that the damage was less than 10 per cent and that the plant was shut down for four days only and is now in full operation. It had been reported that the loss was 50 per cent.

The Richmond Iron Works, Richmond, Va., has filed a voluntary peti-

tion in bankruptcy, giving secured claims at $49,696.83 and unsecured claims at $14,829.79. The company's real estate is valued at $75,000, and its machinery, tools, etc., at $3.100. H. D. Eichelberg was appointed receiver.

The Perkins Machine Co., Warren, Mass., shipped 10,300 pounds of presses by American express from Warren to the Quaker Oats Co., Cedar Rapids, Ia., on March 13. This is the second shipment made by express of such vast weight by the Perkins Co.

The Dow Wire & Iron Works, Louisville, which has increased its capital stock from $60,000 to $100,000, announces that it will make no changes in the plant. The concern enlarged its capitalization in order to provide additional funds for carrying on the business. W. Hume Logan is president of the company.

The Sherman - Lucas - Smith Co., Chattanooga, Tenn., patentees of a gearless, frictionless, reversible, variable speed power transmission, advises that it is not at present in the market for any material, machinery or tools, but expects to have its appliances manufactured.

The plant of the Shepherd Engineering Co., Williamsport, Pa., has been sold at auction. Attorney Seth T. McCormick bought the real estate, heating, power, compressed air and lighting plants for $10,000 and other stock of the company was sold in bulk to Charles Fraley & Sons, Philadelphia, for $21,000.

James B. Hoge, Elyria, O., has been appointed receiver for the National Vapor Stove Co., Lorain, O. The concern was bought by the National Stove Co. several years ago The receiver is asked that certain moneys and other assets be apportioned and affairs settled. H. B. Hun and others, of Lorain, are named in the petition.

The Billings Process Co., 201 Woodward building, Birmingham, Ala., which controls certain processes to be applied in the smelting of iron ore at blast furnaces, has been organized with the following officers: C. W. Hill, president and treasurer; A. H. Graves, vice president; James R. Billings, secretary. The company is capitalized at $1,000,000.

The Wire Products Co., Rockford, Ill., recently incorporated, advises that it will specialize in wire formed parts of every description. The company has rented factory space, including power, and therefore will not undertake any building. Most of the equipment will consist of special machinery. Regular tools which will be required have been purchased.

The Laconia Car Co., with offices in Boston and Laconia, N. H., has been incorporated under the laws of Massachusetts. The company is engaged in the manufacture of freight and passenger cars and automobiles and is capitalized at $2,000,000. The incorporators are Donald M. Hill, Fitz-Henry Smith Jr., Evelyn L. Sheehy, Philip S. Davis and Sigfrid L. Mellin.

The Allith-Prouty Co., Danville, Ill., advises that the recent fire in its plant at Albion, Mich., was in the plating department only, it having been entirely destroyed. It will not be rebuilt at Albion as the entire plant at that place has been moved to Danville, where the company has installed a complete and up-to-date plating department.

A strike has been declared in the plant of the Belle City Malleable Iron Co., at Racine, Wis. The strikers, who are for the most part Hungarians and Italians, have been getting $1.75 per day, but demanded $2. The company was obliged to refuse the demand for a 25-cent per day increase. About 450 men are out of employment and the foundry is closed.

Stockholders of the old Continental Steel & Supply Co., Ellwood City, Pa., are preparing to reorganize and continue the manufacture of nails in a portion of the plant new opened by the Glenn Mfg. Co. It will be known as the Ellwood City Nail Co. Ira E. Baxter, D. P. Loughlin, August Miller and George E. Blythe are applying for the charter for the company.

The American Compensating Valve Co., Manitowoc, Wis., advises that it plans to manufacture and market its compensating air valve in that city, arrangements for the manufacturing end having been taken care of through one of the local plants of the company. The selling organization will be composed of the incorporators, who will build up this end, aiming to cover all domestic and foreign fields.

The St. Louis Implement, Vehicle and Hardware Association gave one of its monthly dinners at the American hotel, St. Louis, last week, and voted to give its members a river excursion on the steamer City of Alton, in June. Robert F. Walker, former attorney general of Missouri, and Carl Hirdler, superintendent of the John Deere Plow Co., were the principal speakers. Philip E. Ebrenz, of the Sligo Iron Co., was toastmaster.

A charter has been applied for in Harrisburg for a company to be known as the McClintock - Sprague-Wilhelm Co., Inc., of Pittsburgh, the object of which is the manufacturing, jobbing, brokerage and otherwise dealing in tin and sheet iron ware, miners' and mining supplies, hardware sundries, etc. The incorporators mentioned are Roy McClintock, George H. Sprague and S. P. F. Wilhelm, of Pittsburgh.

D. S. Hunter, of the Northern Fire Apparatus Co., Minneapolis; E. D. Thompson, formerly associated with Theo. Geissman & Co., Chicago, and R. F. DeForest, formerly assistant purchasing agent of the Minneapolis Steel & Machinery Co., have organized the D. S. Hunter Co., of Minneapolis. This concern will act as direct mill representative of the DeForest Sheet & Tin Plate Co., Niles, O., the Rome Brass & Copper Co., Rome, N. Y., and other eastern mills. A complete line of iron, brass, copper and steel products will be handled.

The Barlow Co., Holyoke, Mass., advises that the "Matchless heaters" have been made by the company as a separate department, and that it was found necessary to form a new corporation. It has been named the Matchless Heater Co., and will take over the sale end of the department. Until larger quarters are obtained the manufacturing will be done by the Barlow Co. No further equipment is needed at present. The officers of the company are: President, George C. Gill; vice president, P. S. Sinclair; treasurer, Gorham P. Hosmer.

The Given Moore Co., Columbus, Ind., which was recently incorporated, advises that it has practically concluded arrangements for a factory in that city which has been standing idle and has some machinery in it which the company can use. The company will need some additional machinery, however, including the following: One band saw, one circular and rip saw, one swing cut-off saw, one jointer, one planer, one boring machine, one hollow chisel mortising machine, one 12-inch lathe, one radial drill 4 or 6 feet, one key seater, one punch and one A. C. 20 or 25 horsepower motor.

## Trade Notes

The Osborn Engineering Co., Cleveland, announces that on and after April 1, its main office will be located at 740 Engineers building, that city.

The Standard Supply & Equipment Co., Pittsburgh, has leased a new warehouse and office building at 2835 Smallman street in the Lawrenceville district, which it will occupy this spring. The company at present is located in the Point district of the city.

## Fires

The plants of the E. L. Essley Machinery Co. and the Union Twist Drill Co., Chicago, were damaged by a recent fire.